

**GOOD NEWS FOR LOW INCOME FAMILIES:
EXPANSIONS IN THE EARNED INCOME TAX CREDIT AND THE MINIMUM WAGE**

December 1998

A report by
The Council of Economic Advisers

EXECUTIVE SUMMARY

- The strongest labor market in a generation has resulted in particularly large gains among low-wage and disadvantaged workers. From 1979 to 1993, the real wages of low-wage workers fell sharply. Recently, however, low-wage workers have experienced large increases in real wages: For low-wage men, wages are up since 1996 by 5.7 percent after inflation. And for low-wage women, real wages have risen 6.1 percent.
- These strong wage gains have been accompanied by a steep decline in unemployment for low-skilled workers. In 1993, 11.1 percent of workers without a high school degree were unemployed; today that rate has fallen to 7.2 percent. Among high school graduates (with no college), the rate has fallen from 6.6 to 3.9 percent. Low-wage workers are thus gaining both by working more and by earning more for every hour that they work.
- The effects of a strong economy have been reinforced by successful policies designed to make work pay. Expansions in the Earned Income Tax Credit (EITC) since 1993 are supplementing the incomes of low-wage working parents. The EITC is one of our most successful programs for fighting poverty and encouraging work:

Lifts more than 4 million Americans out of poverty. The EITC lifted 4.3 million Americans out of poverty in 1997 -- more than double the number in 1993.

Dramatically reduces child poverty. In 1997, the EITC reduced the number of children living in poverty by 2.2 million. This report finds that over half of the decline in child poverty between 1993 and 1997 can be explained by changes in taxes, most importantly the EITC.

Encourages work among single women with children. In 1992, 73.7 percent of single women with children were in the labor force. In 1997, 84.2 percent of such women were in the labor force. The percentage of single women with children who received welfare and did not work has been cut by more than half -- from 19.3 percent in 1992 to 8.3 percent in 1997. Research studies suggest that the increase in labor force participation among single mothers is strongly linked to the expansion in the EITC.

- Increases in the minimum wage have been important in raising the earnings of low-wage workers. Empirical research suggests that recent minimum wage increases have had little or no adverse effect on employment.
- The combined effects of the minimum wage and the EITC have dramatically increased the returns to work for families with children. Between 1993 and 1997, families with one child and one earner who worked full-time at the minimum wage (i.e., \$4.72 in 1993 and \$5.15 in 1997, in 1997 dollars) experienced a 14 percent -- \$1,402 -- increase in their income, after inflation, just because of these two policies alone. Similar families with two children experienced a 27 percent -- \$2,761 -- increase in their income.

GOOD NEWS FOR LOW INCOME FAMILIES: EXPANSIONS IN THE EARNED INCOME TAX CREDIT AND THE MINIMUM WAGE

1. The Labor Market Continues to Perform at a Record Pace

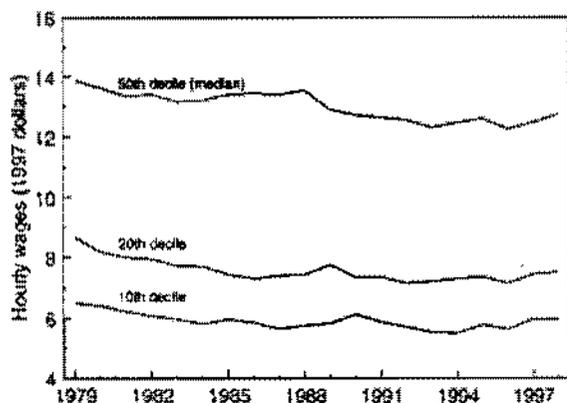
American workers are currently benefiting from the strongest labor market in a generation. Employment is at an all-time high, with 132 million Americans at work in November 1998, up from 119 million in January of 1993. Only 4.4 percent of the labor force is unemployed, having fallen by 2.9 percentage points since this Administration took office; the unemployment rate is now at its lowest level since 1969. Moreover, wages of workers are up sharply in the past several years, with a gain in median wages (after inflation) of 4.4 percent from 1996 through August of this year. As this report indicates, these gains are particularly strong among low-wage and disadvantaged workers, following more than a decade of labor market losses. Administration policies have been important in helping those at the bottom end of the labor market begin to catch up and share in the overall economic growth of the 1990s.

2. Low-Wage and Disadvantaged Workers are Making Particularly Large Gains

Low-wage and disadvantaged workers have experienced substantial gains in wages and employment. The real wages of low-wage male workers have shown large increases in the past few years, in contrast to the period from 1979 to 1993, when they declined by 14.7 percent. (We define low-wage as those workers at the bottom decile of the wage distribution.) Among low-wage women, the decline was 15.8 percent over this period. Charts 1 and 2 show recent significant improvements in real wages among all workers, but with particularly large gains among the lowest paid. Since 1996, men in the bottom decile have increased their earnings by 5.7 percent after inflation (Chart 1), while women have gained 6.1 percent (Chart 2).

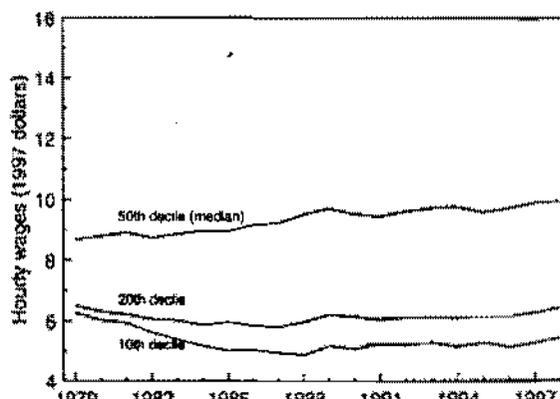
At the same time, unemployment rates among the least skilled have plummeted. When this Administration took office in 1993, 11.1 percent of workers without a high school degree were unemployed; today that rate has fallen to 7.2 percent. Among high school graduates (with no college), the rate has fallen from 6.6 to 3.9 percent. Hence, low-wage workers are working more and earning more for every hour that they work.

Chart 1: Hourly Wages of Men Aged 18 and Over



Note: 1998 figure is the January through August average.

Chart 2: Hourly Wages of Women Aged 18 and Over



Note: 1998 figure is the January through August average.

One group in particular -- single mothers -- has also experienced significant increases in labor force participation during this time period. Labor force participation rates among single mothers began to climb in 1993 after remaining essentially unchanged at 74 percent since 1984. By 1997, 84 percent of single mothers were in the labor force, a marked change for a group that has traditionally had extremely high rates of poverty and welfare usage.

3. Administration Policies Have Played a Key Role in These Gains

The strong overall economy has been an important factor in increasing the wages and employment of less-skilled workers. Typically, employment among workers with less education is more sensitive to changes in the economy, with larger gains in recoveries and larger losses in downturns. This Administration has worked hard to maintain an environment in which economic growth can flourish and American businesses can compete fairly, both at home and abroad. However, the strong economy is not the only reason for these gains among less skilled workers. Administration policies to "make work pay" by expanding the Earned Income Tax Credit and raising the minimum wage have also been important.

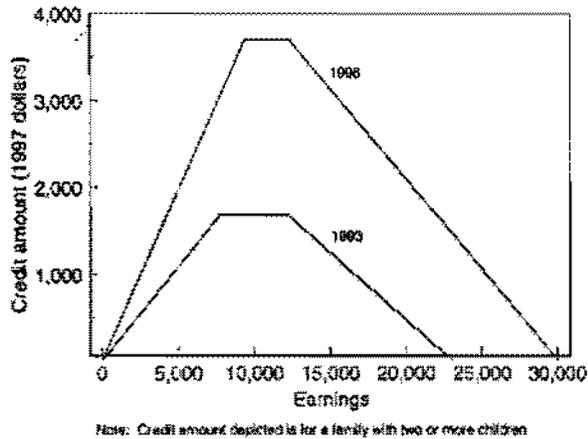
3.1 Expanding the Earned Income Tax Credit

Description of the EITC

The goals of the Earned Income Tax Credit (EITC) are to make work pay, to help ensure that working parents do not have to raise their children in poverty, and to offset the total tax burden of low and moderate income working families. As a result, the EITC eases the transition from welfare to work. To achieve these goals, the EITC consists of a refundable tax credit for working families with low incomes that offsets a family's total tax burden. Because the credit is refundable, individuals can receive the full amount to which they are entitled even if the amount exceeds the individual income taxes they owe. About 80 percent of EITC payments offset individual income, social security, and other Federal taxes borne by families receiving the credit.

Only families that work are eligible for the tax credit, and the amount of the credit depends on a family's labor market earnings. In 1998, for every dollar a low-income worker earns up to an established limit, as much as 40 cents is added to compensation in the form of a tax credit. In particular, the amount of the credit rises with earnings up to a maximum credit of \$2,271 for a family with one child and \$3,756 for a family with two or more children. The credit is flat for a range of earnings and then is phased out.

Chart 3: The Earned Income Tax Credit in 1993 and 1998



The EITC was significantly expanded in the Omnibus Budget Reconciliation Acts (OBRA) of 1990 and 1993. As a consequence of these expansions, the EITC now provides a greater incentive for labor force participation than in 1993. In 1993, very low-income parents receive an additional 19 to 20 cents for each additional dollar earned. In 1998, a very low income parent with one child will receive 34 cents for additional earnings; if he or she has two children, the EITC will add 40 cents to their take-home pay (Chart 3).

OBRA 1993 significantly increased the credit for families with two or more children. The maximum credit was increased by over \$1,500 (1998 dollars), while eligibility for the credit was

extended to families with incomes up to \$30,050 (or about \$3,600 above the prior law level). In addition, the 1993 expansion helped lower taxes for 15 million working families in 1996.

About 19.7 million workers are expected to claim the EITC in tax year 1998, receiving an average credit of \$1,547. About 16.5 million of these claims will be for workers living with children, who will receive an average credit of \$1,807.

The EITC is a non-bureaucratic way to reward work effort. There are no middlemen service providers, no long lines at government offices, and there is no need to take time off from work to apply for the credit. Working families apply directly to the Internal Revenue Service for the EITC and generally receive the credit as part of their tax refund.

Participation in the EITC

While the EITC offers a substantial incentive to work and move out of poverty, the credit is effective if low-income families apply for it. A relatively high fraction of families eligible for the EITC -- 81 to 86 percent in 1990 -- have claimed the credit.¹ The participation rate has been substantially higher than those for other antipoverty programs, including AFDC (62 to 72 percent in 1986/87), and Food Stamps (54 to 66 percent in 1986/87).²

¹Scholz, J.K. (1994). "The Earned Income Tax Credit: Participation, Compliance, and Antipoverty Effectiveness." *National Tax Journal*, 59-81.

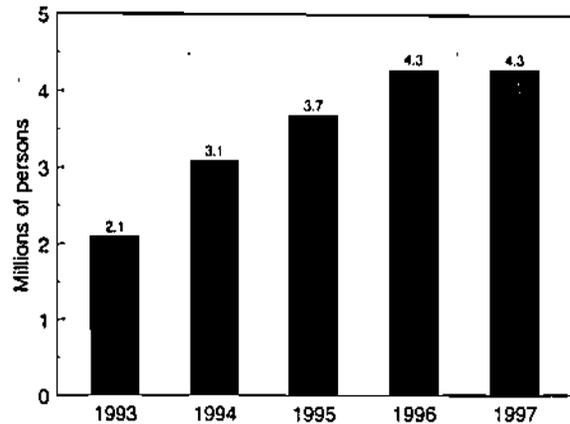
²Blank, R. and P. Ruggles (1996). "When Do Women Use AFDC and Food Stamps? The Dynamics of Eligibility vs. Participation." *Journal of Human Resources*, 57-89.

The EITC has reduced poverty

The EITC is targeted to families living in poverty with the goal of lifting their income above the poverty line. As shown in Chart 4, the latest estimate from the Census Bureau shows that the EITC removed 4.3 million persons from poverty in 1997, which is more than double the number who were removed from poverty in 1993.

Over half of the people removed from poverty by the EITC (2.2 million) were children under the age of 18, and 1.8 million were living in families headed by unmarried women. Updating analyses reported in the 1998 Economic Report of the President, it is found that over half of the decline in child poverty between 1993 and 1997 can be explained by changes in taxes, most importantly the EITC (Table 1). In addition, the EITC removed about 1.1 million African-Americans and nearly 1.2 million persons of Hispanic origin from poverty in 1997. It is clear that the EITC has become a major weapon in our fight against poverty.

Chart 4: Number of People Removed from Poverty by the EITC



The EITC has increased the labor force participation of single mothers

Between 1993 and 1997, the real value of the maximum EITC payment increased by 38 percent for single mothers with one child and by 116 percent for single mothers with two or more children.³ These increases coincided with the period when the proportion of single mothers in the labor force increased dramatically, from 73.7 percent in 1992 to 84.2 percent in 1997.

In contrast, the labor force participation of single women without children -- who became eligible for a very small credit in 1994 if their earnings were very low -- did not change over this period (Chart 5). As Chart 6 indicates, the difference in the labor force participation rates of single women with and without children has closely tracked the growth in maximum EITC

Chart 5: Labor Force Participation Rates of Single Women With and Without Children

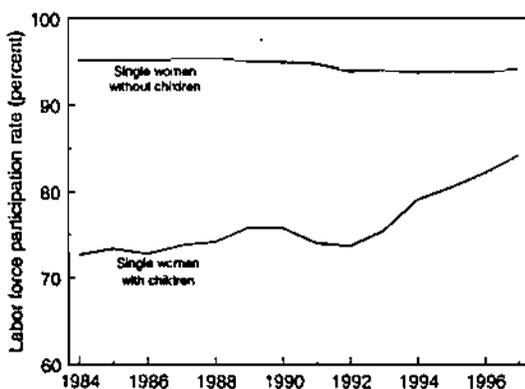
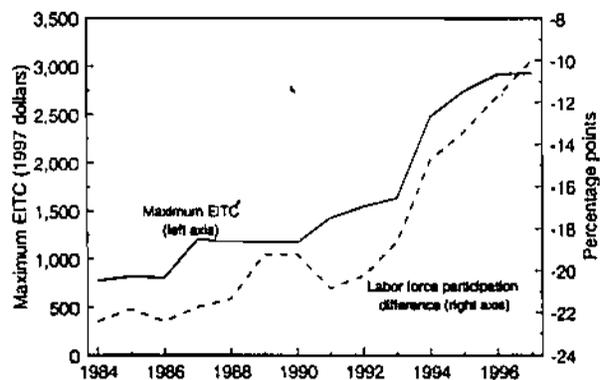


Chart 6: Maximum EITC and Difference in Labor Force Participation Between Single Women With and Without Children



Note: After 1990, the maximum EITC is the average of the maximum for taxpayers with one child and with more than one child.

³The same numbers apply to two-parent families.

benefits.⁴

One recent study concluded that as much as 60 percent of the increase in employment of single mothers since 1984 was attributable to expansions in the EITC.⁵ For the period between 1992 and 1996, the EITC explains 33 percent of the increase in annual employment. A second study examined the 1986 EITC expansion, which was more modest than the 1993 expansion, and found that it significantly increased labor force participation among single mothers, especially for less educated women.⁶ Yet another study found that the EITC could result in an increase in labor supply of 19.9 million hours in 1996 relative to 1993 law and induce 516,000 families to move from welfare into the workforce.⁷

EITC benefits for married couples are based on the combined earnings of both husband and wife. Hence, married couples are more likely than single parent families to fall in the range of earnings where the EITC is being phased out. This has caused some researchers to predict that the EITC might cause a decrease in hours of work among married couples. However, the limited available evidence suggests that the expansions in 1986, 1990, and 1993 had modest disincentive effects of 1.2 percentage points on labor force participation of wives, and they actually had a small positive effect on married men (of 0.2 percentage points).⁸

How is the extra income from the EITC being used?

Most families receive their EITC dollars at tax payment time, in the form of a larger refund. A recent study interviewed low-income workers who had gone to a volunteer tax preparation office in Chicago for assistance with their tax return. The study asked the workers what they planned to do with the EITC they were expecting to receive and found that 61 percent planned to use at least some of their refund for investment purposes, such as to pay for education (9 percent), repair, buy, or finance a car (10 percent), or to pay for a move (5 percent). Twenty-

⁴Liebman, J.B. (1998). "The Impact of the Earned Income Tax Credit on Incentives and Income Distribution." *Tax Policy and the Economy*, 12, 83-119.

⁵Meyer, B., and D.T. Rosenbaum (1998). "Welfare, the Earned Income Tax Credit, and the Employment of Single Mothers." Department of Economics, Northwestern University.

⁶Eissa, N. and J.B. Liebman (1996). "Labor Supply Response to the Earned Income Tax Credit." *Quarterly Journal of Economics*, 111(2): 605-637.

⁷Dickert, S., S. Houser, and J.K. Scholz (1995). "The Earned Income Tax Credit and Transfer Programs: A Study of Labor Market and Program Participation." *Tax Policy and the Economy*, 9, 1-50.

⁸Eissa, N. and H.W. Hoynes (1998). "The Earned Income Tax Credit and the Labor Supply of Married Couples." Department of Economics, University of California, Berkeley.

eight percent said they were saving at least some of the EITC for future use.⁹

3.2 Increasing the Minimum Wage

The Administration has fought for increases in the minimum wage, and on October 1, 1996 the rate was raised from \$4.25 to \$4.75. The rate was increased again to \$5.15 on September 1, 1997. Prior to these increases, it had been five years since the minimum wage was last raised, and its real value had decreased by 15 percent (Chart 7).

As shown in Charts 1 and 2, the wages of low-wage workers increased substantially since 1996, and the recent minimum wage increases are likely to explain much of this rise. It has been estimated that almost 10 million workers benefited from the recent minimum wage hikes.¹⁰

Most of the workers benefiting from the wage increases are adults from lower income families, and their wages are a major source of their family's earnings. Among workers who were earning between \$4.25 and \$5.15 just prior to the minimum wage increases, 71 percent were adults (20 or older), 58 percent were women, and one-third were black or Hispanic workers. Almost half of the affected workers (46 percent) worked full-time, and most of the low-wage workers were in low-income households. That is, over half of the benefits from the minimum wage increases were received by households in the bottom 40 percent of the income distribution. And in 1997, the earnings of the average minimum wage worker accounted for 54 percent of their family's total earnings.

One of the potential side effects of increasing the minimum wage is a reduction in employment. That is, with labor more expensive, some firms may hire fewer workers. Many empirical studies have examined this issue, and the weight of the evidence suggests that modest increases in the minimum wage have had very little or no effect on employment. In fact, a recent study of the 1996-97 wage increases used several different methods and found that the employment effects were statistically insignificant. Moreover, the unemployment rates of African-American teens and high school dropouts, who are two groups of workers most likely to



⁹Smeeding, T., K. Ross, M. O'Connor, and M. Simon (1998). "The Economic Impact of the Earned Income Tax Credit (EITC)." Center for Policy Research, Maxwell School of Public Policy, Syracuse University.

¹⁰This finding, and the subsequent two paragraphs are based on: Bernstein, J., and J. Schmitt (1998). *Making Work Pay: The Impact of the 1996-97 Minimum Wage Increase*. Economic Policy Institute, Washington, D.C.

be affected by the wage hike, are lower today than they were just prior to the increases.

4. The Combined Effects of EITC and Minimum Wage Expansions

Increases in the minimum wage and expansions in the EITC reinforce each other. Among low-wage workers, these changes have produced substantial increases in income. Table 2 demonstrates the combined effect of the two policies (after inflation), comparing 1993 and 1997 (as if the minimum wage was in effect the full year). During this period the minimum wage rose by 9 percent, while the maximum EITC credit rose by 38 percent for one-child families (116 percent for two-child families). For families with one earner working full-time at the minimum wage, their combined earnings-plus-tax refund would have risen 14 percent if they had one child (27 percent if they had two or more children). This is a significant gain in real purchasing power among these parents.

As the bottom of Table 2 demonstrates, full-time work at the minimum wage no longer leaves families below the poverty line. As a result of these policy changes, one and two-child families with a single full-time minimum wage worker now earn enough to escape poverty.

5. Conclusion

The past several years have been very good ones for less-skilled workers in the labor market. Wages are up and unemployment is down. Among single mothers, many more are participating in the labor market, while welfare caseloads have declined steeply. The research evidence indicates that these gains partially reflect the strong economy, but that the gains have been reinforced by Administration policies that have increased the financial rewards for low-wage and less skilled persons to work.

Providing the economic incentives to work are an important legacy of this Administration. These gains mesh well with other goals this Administration has pursued, such as adequate child care for the children of working mothers and available training for those workers who want to increase their skills and work opportunities. In the long run, a healthy strong economy must rely on a trained and hard-working labor force, with opportunities for both the more and less educated. There has been real progress toward this goal in recent years.

Table 1. Factors Accounting for Changes in Child Poverty

	1979-97	1979-89	1989-93	1993-97
Changes to official poverty rate attributable to changes in:				
Family structure	2.1%	1.2%	0.8%	0.3%
Earnings and other before-tax-and-after income	1.4%	1.1%	3.5%	-3.6%
Cash social insurance and welfare payments	0.3%	1.0%	-1.1%	0.5%
Total change in official poverty measure	3.8%	3.2%	3.1%	-2.8%
Change in extended poverty rate attributable to changes in:				
Means-tested food and housing transfers	0.4%	0.4%	-0.3%	0.4%
Taxes	-2.3%	0.3%	0.0%	-2.6%
Total change in extended poverty rate	1.9%	4.0%	2.9%	-5.0%

Table 2. The Effects of Changing Minimum Wage and EITC on Earnings of Single Parents
(All numbers in \$1997)

	1993	1997	Percent Change
<u>Program Parameters</u>			
Minimum wage	\$4.72	\$5.15	9
Maximum EITC			
One-child family	\$1,602	\$2,210	38
Two-child family	\$1,689	\$3,656	116
<u>Earnings minus taxes*</u>			
One-child family	\$10,320	\$11,722	14
Two-child family	\$10,407	\$13,168	27
<u>Ratio of earnings minus taxes to poverty line</u>			
One-child family	0.93	1.06	
Two-child family	0.80	1.02	

*Assumes one earner works full-time/full-year (2000 hours) at minimum wage. Taxes include income taxes (including the EITC) and employee share of social security taxes.

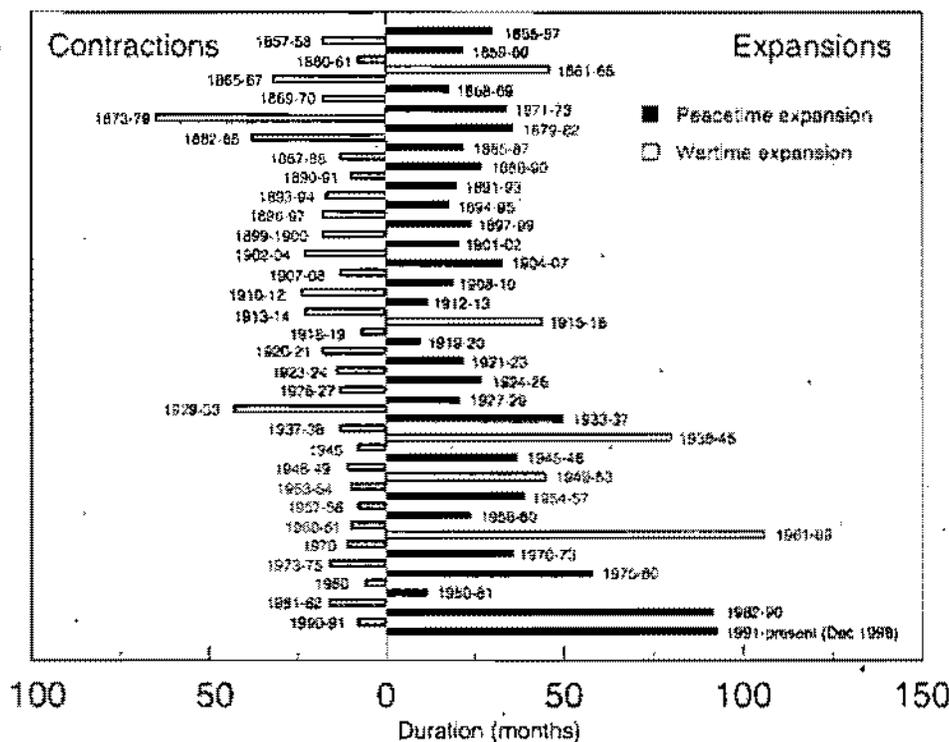
Latest Jobs Report Indicates That the Current Expansion Has Achieved Record Length

A Report by the
 Council of Economic Advisers
 January 8, 1999

With today's strong jobs report, the CEA believes that December will be rung up as the 93rd month of the current economic expansion, making it the longest peacetime expansion on record.

- The longest previous peacetime expansion ran 92 months, from December 1982 to July 1990.
- When wartime expansions are included, the current expansion is the second longest on record; the expansion from March 1961 to December 1969 lasted 106 months (Chart 1).

Chart 1: Duration of Business Cycles since 1855



The Dating of Business Cycles

The consensus of private forecasters sees the expansion continuing in 1999, but its precise length will not be known until some time after it has ended.

- The dating of business cycles is not an official U.S. government function. Instead, once it has become clear that the economy has reversed direction, the Business Cycle Dating Committee of the National Bureau of Economic Research (NBER) meets to determine the turning point for historical and statistical purposes. For example, the July 1990 business cycle peak was announced April 25, 1991 and the March 1991 trough was announced December 22, 1992.
- A popular recession indicator is two consecutive quarters of decline in real GDP, but the NBER does not use this approach. Rather, a recession is a recurring period of decline in total output, income, employment, and trade, usually lasting from 6 months to a year.

The Policy Framework

According to NBER dating, the economy was out of the 1990-91 recession when President Clinton took office.

- But the recovery was weak and job growth appeared slow. In fact, the unemployment rate rose a full point to 7.8 percent between the March 1991 trough and June 1992.
- And, of course, the recession had aggravated the problem of large budget deficits inherited from the 1980s.

The President put in place an economic strategy grounded in deficit reduction, investment, and opening markets abroad.

- In contrast to the previous two long expansions, which were marked by tax cuts and a stimulative fiscal policy, the President's program was based on the idea that reducing the Federal budget deficit would allow interest rates to come down and stimulate private investment.
- This policy of fiscal discipline, together with an appropriately accommodative monetary policy by the Federal Reserve, produced a favorable climate for business investment and a strong investment-led recovery.
- While reducing overall Federal government spending as a share of GDP, the Administration has pushed for more spending in critical areas such as education and training, children, the environment, health care, and research and development.

- The United States has been successful in expanding its real exports by almost 8 percent per year since 1993, even though the trade deficit has widened dramatically as the strong U.S. economy has continued to attract imports while slower growth abroad has reduced demand for U.S. exports.

Achieving the Employment Act's Objectives

The Employment Act of 1946 established a policy framework in which the Federal government assumed responsibility for trying to stabilize short-run economic fluctuations, promote balanced and non-inflationary economic growth, and foster low unemployment. The three longest expansions of the past century—including the current one—have occurred since the Act was passed.

Judged by the objectives of stabilization policy (inflation and unemployment), the current economic expansion is one of the most successful in the Nation's history.

- Jobs. The unemployment rate is the lowest it has been in almost 30 years and more Americans are working than ever before.
 - Between the March 1991 trough and December 1998, 18.8 million jobs have been created (17.7 million of them since January 1993).
 - Employment is at an all-time high, with 132.5 million Americans working in December (64.2 percent of the working age population) and only 4.3 percent of the labor force unemployed.
 - Demographic change and other factors have altered the relationship between the unemployment rate and the risk of inflation over time, and the unemployment rate has not come down quite so low in this expansion as it did in the 1960s (Chart 2). But with a responsible fiscal policy in place and favorable inflation and productivity developments, there was little pressure for interest rate hikes that could have choked off the expansion prematurely.
- Inflation. Three-quarters of the way through the eighth year of expansion, inflation (both core and total) remains tame even though the unemployment rate has been very low for almost 2 years.
 - This situation stands in marked contrast to the sharply rising inflation experienced at the end of the 1960s expansion and the milder price acceleration seen at the end of the 1980s expansion (Chart 3)

Chart 2: The Unemployment Rate in Three Long Expansions

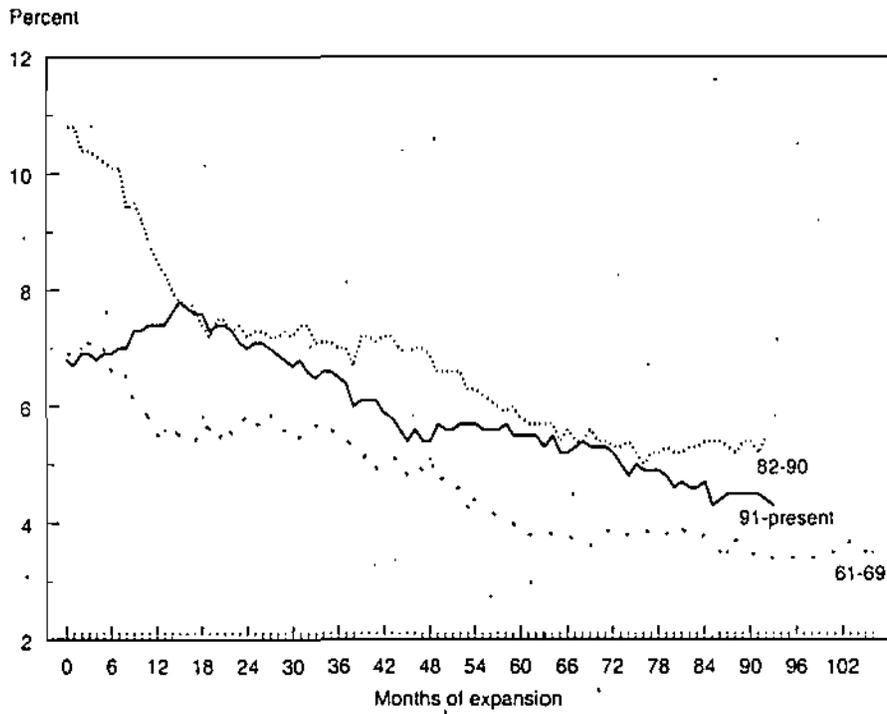
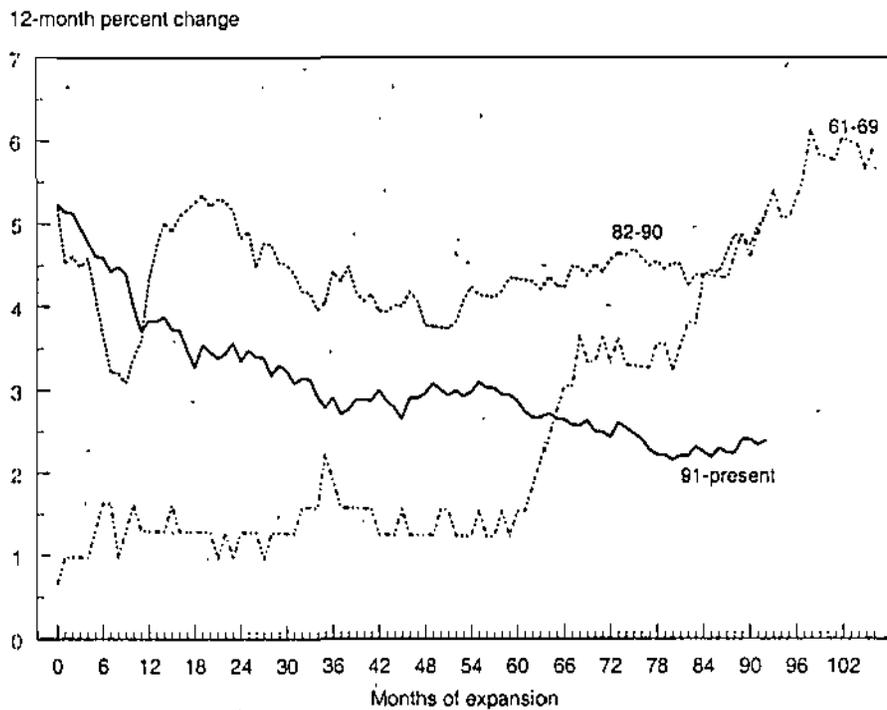
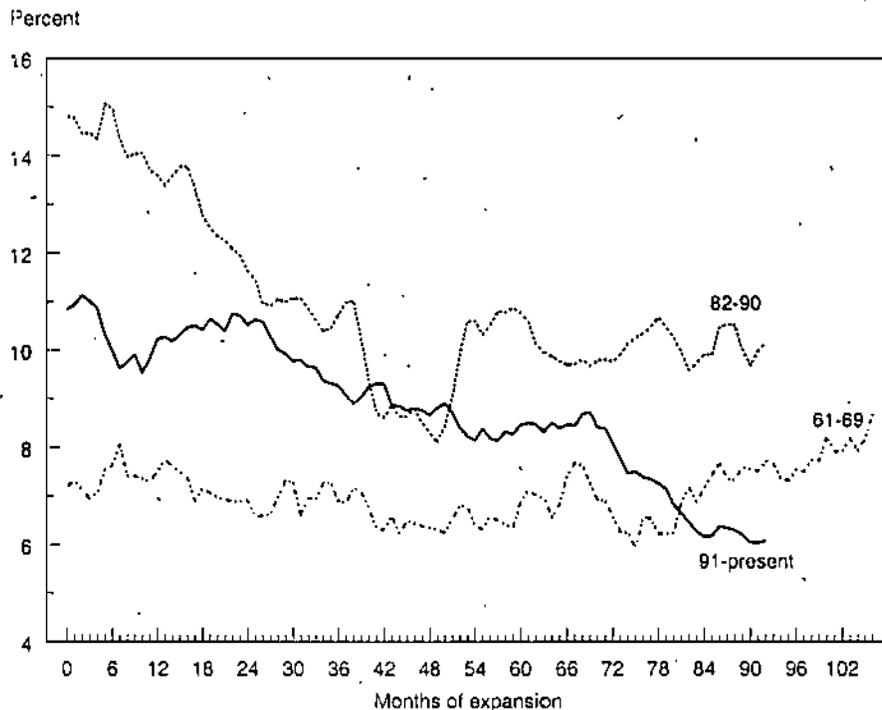


Chart 3: Core CPI Inflation in Three Long Expansions



- This good inflation performance has been aided by favorable conditions such as the continuing sharp decline in computer prices, a drop in oil prices, rapid growth of industrial capacity, and downward pressure on traded goods prices due to weakness in the world economy.
- A very low misery index. The combination of low inflation and low unemployment in this expansion is comparable to the low "misery index" (the sum of the two) achieved in the late 1960s (Chart 4). This time, however, inflation is tame rather than rising.

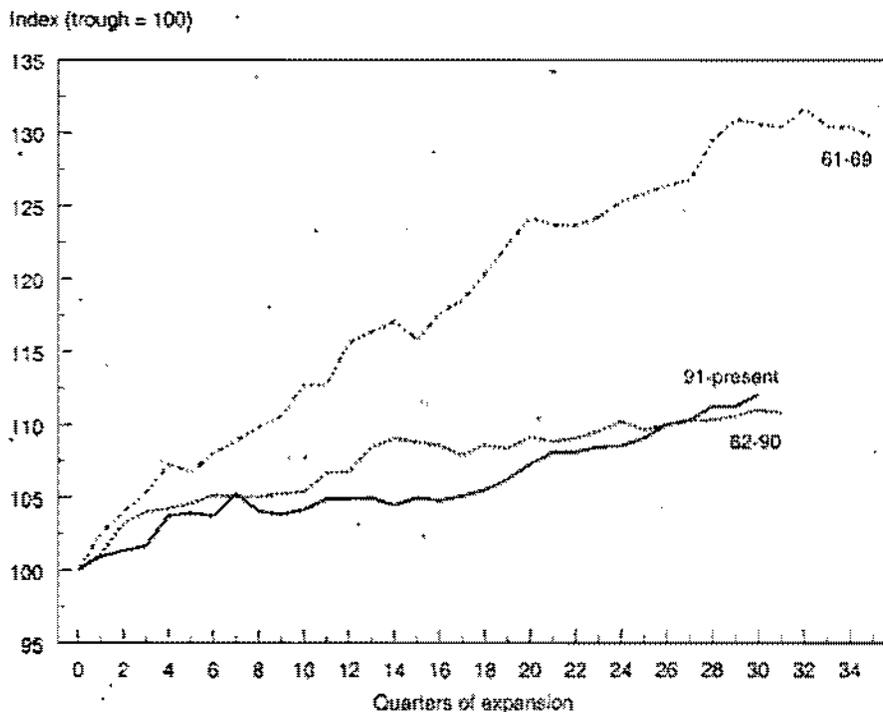
Chart 4: The Misery Index in Three Long Expansions



Sustained productivity growth over the course of this expansion has been an important contributor to growth.

- With slower growth in the working-age population and lower trend productivity growth since the early 1970s, aggregate GDP could not have grown as fast as it did in the 1960s.
- Productivity growth—which is what matters for real wages and a rising standard of living over the longer term—has continued to be relatively strong well into this expansion (rather than exhibiting the decline that often occurs late in expansions, Chart 5). However, the rate of productivity growth over this expansion remains well below that achieved prior to the productivity slowdown of the early 1970s.

Chart 5: Nonfarm Productivity in Three Long Expansions



An Investment-Led Recovery

The deficit reduction strategy underlying the current expansion has paid off in higher private investment.

- As the largest component of GDP, consumption was the largest contributor to growth in all three long expansions. However, the contribution of investment to growth in this expansion has been almost twice as great as it was in the other two long expansions, and the contribution of government spending has been substantially smaller (Chart 6).
- Business investment, especially in producers' durable equipment, has grown particularly rapidly on a sustained basis over this expansion (Chart 7)
- Net exports have subtracted from growth in this expansion. In contrast to the current account deficits of the 1980s, however, when both national saving and domestic investment were falling as a share of GDP over much of the period, the current account deficits of the 1990s reflect generally rising net national investment that is greater than generally rising net national saving.
- Federal government spending has provided no stimulus in this expansion. The small contribution of government has been due to state and local government spending.

Chart 6: Contributions to Growth in Three Long Expansions

Share of total increase in GDP (percent)

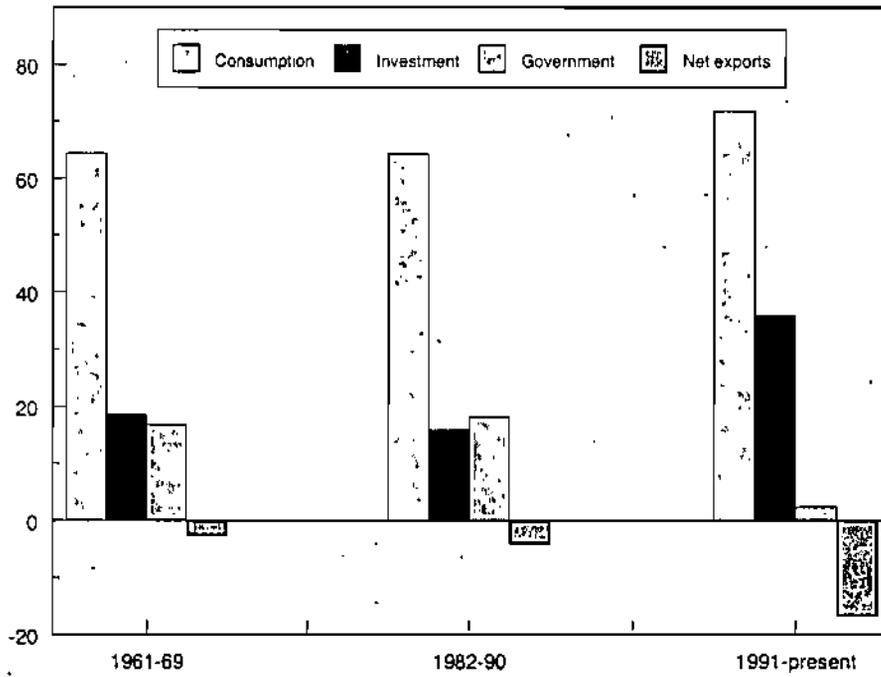
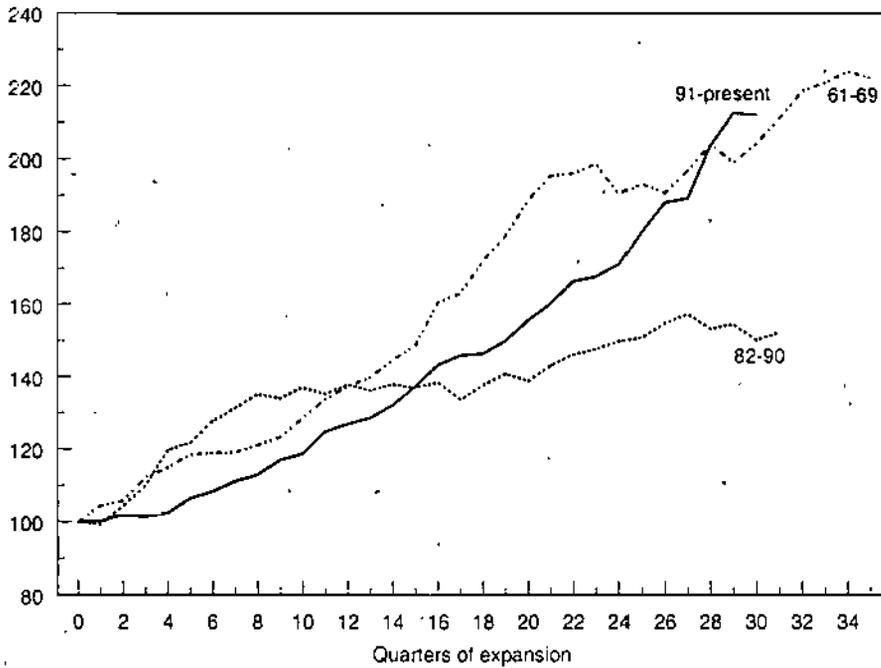


Chart 7: Producers' Durable Equipment in Three Expansions

Index (trough = 100)

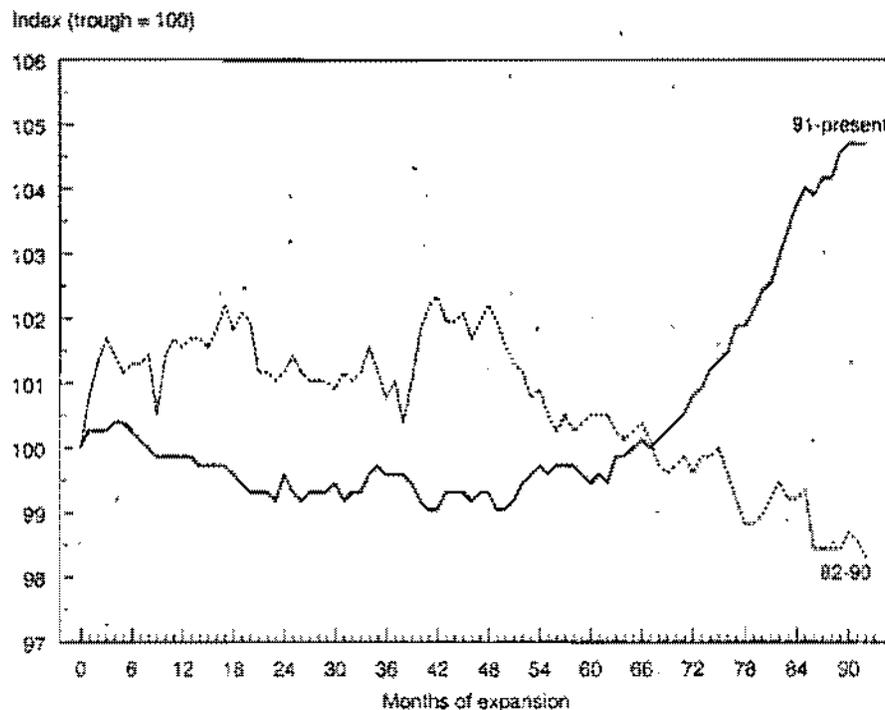


Benefits of a Strong Labor Market

American workers, including groups that had fallen behind over the past two decades or so, have been major beneficiaries of the sustained tight labor market this expansion has produced.

With strong increases in the past 2 to 3 years, real wages have grown more over the course of this expansion than they did in the 1980s expansion (Chart 8).

Chart 8: The Real Wage in Two Long Expansions



- Real hourly earnings of production and nonsupervisory workers rose by 5.4 percent between January 1993 and November 1998.
- The widely documented long-term slide in the real wages of men (a drop of 11.4 percent in the median between 1979 and 1996) has been checked by increases of 1.7 percent in 1997 and 2.3 percent in the first 10 months of 1998, according to CEA calculations for full- and part-time workers, aged 16 and over.
- Real hourly wages in the two lowest-paid tenths of the distribution for male workers aged 16 and older have increased by 5 to 6 percent since 1993. The increases for women were significant as well, with wages in the second tenth of the distribution increasing by 4 percent since 1993.

More people are finding work than ever before and they are finding it faster than they would in a less strong labor market.

- The average length of unemployment among workers searching for a job declined to 14.1 weeks in December 1998. It was 18.8 weeks in 1994, the earliest year with comparable data.
- Almost three-quarters of those who were unemployed in December had been unemployed for less than 15 weeks; only 13.7 percent were looking for work for more than 27 weeks.

Recent analyses suggest that the employment relationship is strong.

- *Job displacement.* Job losses due to layoffs, plant closures, and the like have declined substantially since the 1993-95 period, and among those who have been displaced, the share that have found new work has increased. These reemployed workers still typically earn less on the new job than at the job they lost, but these wage losses are the smallest on record.
- *Job tenure.* The popular assertion that secure lifetime jobs have disappeared is overstated. In 1996, a substantial 27 percent of male workers aged 45-64 had long-term jobs (20 or more years with the same employer), even though this fraction had fallen by 7 percentage points between 1979 and 1996. Moreover, the fraction of similarly aged women holding long-term jobs actually *increased* during this period.
- *Discouraged workers.* The number of workers who are not employed and who have not looked for work in the past 4 weeks because they did not think they could find a job has shrunk by one-third since 1994, the earliest year for which comparable data are available.

The strong labor market has also generated gains among groups whose labor market status had not improved in the past decades.

- Median real wages of blacks and Hispanics have risen rapidly in the past 2 years (based on CEA calculations for full- and part-time workers aged 16 and over). The inflation-adjusted increase between 1996 and the first 10 months of 1998 was 5.8 percent for black men, 4.0 percent for Hispanic men, 6.2 percent for black women, and 2.6 percent for Hispanic women. Furthermore, the black and Hispanic unemployment rates for 1998 are at historic lows—8.9 percent for blacks and 7.2 percent for Hispanics.
- Welfare reform, the expansion of the Earned Income Tax Credit, and the strong economy have caused the labor force participation among single women with children to increase to unprecedented levels.

- Employment among male high school dropouts, immigrants, and blacks and Hispanics has increased.
- High-school dropouts have experienced a much larger relative increase in their employment rate since 1993 than those with more education, due to increased labor force participation among dropouts and decreased unemployment among those dropouts who are in the labor force.

Conclusion

The economic policies of the past 6 years have nurtured and sustained what is now the longest peacetime expansion in the Nation's history. More Americans are working than ever before, the unemployment rate is the lowest it has been in a generation, and inflation remains tame. In addition, disadvantaged groups that have been left behind in the past are beginning to experience the benefits of a sustained tight labor market. Turmoil in world financial markets and a slowdown in world growth have tested the strength of this expansion, but the economy remains fundamentally strong. Moreover, evidence suggests that expansions do not die of old age. If we continue to pursue sound policies and enjoy good fortune, we can reasonably look forward to achieving the longest expansion ever in February 2000.

**PROGRESS REPORT:
GROWTH AND COMPETITION IN
U.S. TELECOMMUNICATIONS
1993-1998**

February 8, 1999

The Council of Economic Advisers

EXECUTIVE SUMMARY

Since 1993 the U.S. telecommunications industry has prospered. Telecommunications markets in the United States have continued to open and firms have competed to meet new consumer demands, to build the infrastructure to support the growing information industry spurred by the Internet, and to provide the foundation for future innovations in communications. The benefits for the U.S. economy have been substantial:

- The telecommunications sector has created hundreds of thousands of new jobs since 1993. The telephone services and equipment sectors, long areas of declining employment as technology increased productivity, are directly responsible for the net creation of approximately 200,000 new jobs in the past 5 years.
- Hundreds of new firms have entered all sectors of the industry, with the number of publicly held telecommunications companies alone nearly doubling in the past 5 years. New competitors have been responsible for much of the growth in the local, long-distance, wireless, and equipment sectors.
- New and incumbent firms have collectively invested tens of billions of dollars in facilities, services, and research and development, leading to increased network capacity, deployment of new technology, and roll-out of advanced communications services.
- Output of services has increased and prices have declined industry-wide.

This progress has been supported by the Administration's long-standing commitment to make competition and regulatory flexibility the fundamental principles on which U.S. telecommunications policy is based. In 1993, when Vice President Gore announced those principles in the Administration's National Information Infrastructure agenda, there were predictions that the approach would lead to substantial industry growth. The above results bear those predictions out.

The benefits of a policy approach geared towards opening markets and promoting competition can be seen sector-by-sector in the telecommunications industry:

- Long-distance telephone services: Growing competition in long-distance services has eroded AT&T's market share from its former monopoly level to about 50 percent. With this competition has come increasing availability of low-cost calling plans for a broad range of consumers. As a result, average revenue per minute earned by carriers has been declining steadily for several years and long-distance usage has increased substantially. Consumers will likely reap further benefits as competition grows in the long-distance market under the Telecommunications Act of 1996.
- Local telephone services: Many new carriers have entered the wireline local services

market since the 1996 Act, providing both switched voice and high-speed data services to customers. To date they have created more than 50,000 new jobs and attracted over 30 billion dollars worth of capital investment, not counting debt or private venture financing. Recent entrants, including resellers, have so far captured between 2 and 3 percent of the local services market measured by lines and about 5 percent of the market measured by revenues. The competitive emphasis to date has been on business rather than residential customers, due partly to underlying economic and regulatory factors. As competitors establish their businesses and expand their networks, and now that the Supreme Court has affirmed the FCC's broad authority to implement the 1996 Act's market-opening provisions, local competition for residential customers is likely to increase.

- Wireless telephone service: Increased capacity and competition have led to fast growth of wireless services: over 60 million Americans now subscribe to mobile service; four times the number in 1993. Median prices per minute have fallen, depending on usage levels, between 30 and 40 percent for residential users and as much as 50 percent for business users. Wireless carriers directly created more than 100,000 new jobs from 1993 through 1998. Wireless service revenues have grown an average 24 percent annually since 1993, to \$30 billion. Capital investment by the industry has reached a cumulative \$50 billion.
- Telecommunications equipment: The telecommunications equipment industry in the U.S. has grown substantially. Total revenues in 1998 are estimated at \$120 billion, a three-fold increase since 1993. A growing proportion of manufacturing consists of innovative equipment for integrated voice and data communications over digital networks. Annual U.S. telecommunications equipment exports doubled from 1993 to 1998, to over \$25 billion.
- Telecommunications infrastructure and the information sector: The telecommunications industry provides the infrastructure for fast and reliable transport of information. With the surge in Internet usage in the past 5 years, the number of "hosts" for Internet sites grew from fewer than 3 million to over 30 million and electronic commerce has become a multi-billion dollar industry. Driven by the growing information industry, high-speed data services have spread as providers invest in facilities to provide customers with a variety of "broadband" options; deployment of high capacity fiber grew by at least 16 percent in 1997; and production of innovative data networking equipment has increased. Demand for additional lines has increased with data traffic, from about 9 million lines in 1993 to about 18 million lines in 1997.

In some of the above markets, such as long-distance, growth is the effect of more than a decade of competition. In others, like local telephone service, the regulatory and legislative changes that opened the market to entry occurred much more recently. While more remains to be done for entry to occur in parts of the local market, notably residential service, the lesson from markets with a longer history of entry is that, with time and opportunity, competition can grow and produce the expected benefits.

INTRODUCTION

This report describes developments in the U.S. telecommunications market since 1993.¹ It presents an overview of the growth of the industry, discusses key developments in the long-distance, local, wireless, and equipment sectors, and describes the dramatic rise in use of the Internet and the increasingly interdependent relationship between the information and telecommunications industries. The goal of this report is not to examine the economic issues underlying specific regulatory proceedings, nor is the purpose to analyze whether particular refinements to current laws or regulations would be useful. It is instead to discuss overall trends and to assess the broad impact of the current regulatory framework.

The evidence reviewed demonstrates that the telecommunications industry has been a substantial part of the outstanding performance of the U.S. economy—now in the longest peacetime expansion in American history. Since 1993, the telecommunications industry has created hundreds of thousands of new jobs, seen entry by hundreds of new companies, made tens of billions of dollars of new investment in infrastructure and innovation, raised exports, and fostered a revolution in the scope of communications services available to consumers.

The growth of the American telecommunications industry has been supported by a flexible, competition-oriented approach to policy and regulation. The principles of market competition and regulatory flexibility are implemented in the Omnibus Budget Reconciliation Act of 1993, through which President Clinton signed into law authorization for auctions of spectrum for wireless communications; in the National Information Infrastructure (NII) initiative developed by the Administration in 1993 and overseen by Vice President Gore; and in provisions of the Telecommunications Act of 1996. They appear also in the Administration's initiatives to ensure the successful growth of electronic commerce and to keep the Internet, a key driver of

¹This report focuses on the telephone industry, which includes related carrier services like data transport. It does not address cable, broadcast, satellites, or other mass media services.

demand for telecommunications infrastructure, free from economic regulation.

To be sure, there remain important challenges for telecommunications policy to address – for example, ensuring that competition develops further and more quickly in certain markets and that anti-consumer tactics like “slamming” and “cramming” are stopped. Moreover, innovation and change in a variety of markets, for example in the markets for satellite, cable, and fixed-wireless services, may alter the assumptions underlying some current regulations and require policies to adapt. But by any fair measure, the development of the telecommunications market in the United States must be considered a success. This success provides no basis for complacency, but neither do remaining challenges provide a reason to change the current regulatory approach. Instead, both are strong reasons to adhere more strongly to the underlying principle of open competition that is bringing great economic benefits to American workers, consumers, and businesses, and to make sure that competition has the opportunity to develop in markets where it so far has been unable to do so.

Policy Developments

Traditional market structure and regulation. For much of this century, most telecommunications service in the United States was provided by a single, regulated monopoly. Competition first arose in long-distance service. That market was fully opened to new entrants in 1984, when the Department of Justice's antitrust suit led to the break-up of the integrated Bell system into 7 separate local companies, the Regional Bell Operating Companies ("RBOCs" or "baby Bells") and one unaffiliated long-distance company, AT&T. Telecommunications markets nonetheless continued to be highly regulated. Local telephone service remained, for the most part, the province of monopolies overseen by state utilities commissions. The long-distance market became more competitive but, in order to ensure that it remained so, entry into the market was barred for the RBOCs because they controlled access to local networks and could therefore discriminate against rivals needing that access to originate or terminate long-distance calls. The nascent cellular industry started with two licenses in each service market being issued by the FCC, one to the incumbent local carrier and the other to an unaffiliated entrant. Partly due to regulatory limitations on available spectrum, the market remained a duopoly for several years.

Policy evolution. Recognizing that the telecommunications industry was changing at an increasingly rapid pace due to technological and market innovations, and that the regulatory framework needed to adapt to those changes, the Administration launched the National Information Infrastructure (NII) initiative in September 1993. To complement and advance the NII initiative, the Administration proposed in January 1994 a set of principles for overhauling the regulatory framework of telecommunications and fostering investment and competition. The NII initiative envisioned advanced networks that would make it easy and affordable to connect people to each other, to computers, and to a vast array of services and information resources. On the wireless side, the Omnibus Budget Reconciliation Act of 1993, signed by the President, authorized the FCC to increase competition in the wireless industry by auctioning major blocks of radio spectrum across the country.

Fundamental principles for regulatory reform. Along with the need for a modern, flexible regulatory framework, the Administration promoted from its earliest days the benefits of competition for both consumer choice and innovation. Vice President Gore thus set forth five fundamental principles to guide the study and formulation of legislative proposals for regulatory reform:

- Encouraging private investment in information infrastructure;
- Promoting and protecting competition;
- Providing open access to advanced telecommunications networks for consumers and service providers;
- Preserving and advancing universal service to avoid creating a society of information “haves” and “have nots”; and
- Ensuring flexibility so that the newly-adopted regulatory framework can adapt to rapid technological and market changes in the telecommunications and information industries.

The Telecommunications Act of 1996. The principles of the NII initiative are reflected in many instances in the Telecommunications Act of 1996, which Congress passed with overwhelming bipartisan support. When President Clinton signed the Act into law on February 8, 1996, he called the legislation an important step in the Administration’s commitment “to reform our telecommunications laws in a manner that leads to competition and private investment, promotes universal service and open access to information networks, and provides for flexible government regulation.” The 1996 Act eliminated legal barriers to entry and further opened the door to local phone competition by requiring incumbent local telephone companies to interconnect and exchange traffic with new entrants into the market on non-discriminatory terms,

to lease one or more parts of their networks ("unbundled network elements") to new entrants at cost-based prices, and to provide service at wholesale rates to new competitors so they could gain a foothold in the local market through resale to customers. The Supreme Court recently upheld the FCC's authority to implement many of the market-opening provisions of the Act after the scope of that authority was challenged by incumbent local carriers and certain states.

In addition to imposing market-opening obligations on incumbents, the 1996 Act withholds authority for the RBOCs to enter the long-distance services market until they have fully complied with those obligations. The RBOCs have been barred from that market since 1984, when an antitrust settlement caused their divestiture from AT&T. The 1996 Act lifts that restriction once the FCC finds that an RBOC has met certain market-opening requirements set forth in the statute, providing a further measure to achieve the Act's goal of opening the local market to competition.

The FCC's policy efforts since the Act have focused on implementation. Defining and restructuring universal services, reforming access charges, and establishing the rules under which incumbent local telephone companies can provide "advanced" services over their networks are examples of issues on which the Commission has been working. Further policy developments will follow as markets continue to change in response to the 1996 Act and to new investment and technological innovation.

Economic Growth and Competition in Telecommunications Markets

Revenue growth and contribution to the national economy. At the time the Administration announced the NII initiative in 1993, it was estimated that industries related to the NII would create \$300 billion in new sales for the telecommunications industry and contribute a comparable amount to GNP by 2007. These levels are already being achieved and even surpassed: Communications services and equipment companies had revenues of about \$250 billion in 1993, which grew to \$408 billion in 1998 (Chart 1). Telecommunications services contributed about \$25 billion to GDP growth from 1996 to 1997, and increased their share of GDP by more than 20 percent.²

Overall job creation. The telecommunications services and equipment sectors are directly responsible for the net creation of, conservatively, about 200,000 new jobs since 1993 (Chart 2).³ This increase is extremely significant: prior to 1993, telecommunications employment was decreasing, even as the production of telecommunications services was expanding. For example, from 1981 to 1992, the number of phone lines—"local loops"—in the United States increased by nearly 40 million, and the amount of long-distance calling more than doubled.⁴ But over that same time period, the number of workers in the U.S. telecommunications services industry fell by 200,000.⁵ Indeed, labor productivity in the telecommunications industry—measured as output

² Total telecommunications revenues are the sum of telecommunications equipment sales reported by MMTA and telephone communications services revenues reported by the Census, projected to year-end 1998. U.S. Census Bureau. 1998. *Annual Communications Services Survey*. Also, MultiMedia Telecommunications Association. 1998. *1998 MultiMedia Telecommunications Market Review and Forecast*.

³Bureau of Labor Statistics (BLS). 1999. *National Employment, Hours, and Earnings*. Hereafter, "BLS."

⁴ Federal Communications Commission, Industry Analysis Division. 1998. *Trends in Telephone Service*. pp. 63, 97. Hereafter, "FCC. *Trends in Telephone Service*."

⁵ BLS.

per hour—increased by 80 percent from 1981 to 1992, reducing the number of workers needed even as business grew rapidly.⁶ Labor productivity in telecommunications has continued to grow at least as fast since 1992.⁷ But lower prices, new and innovative services, dramatic growth of wireless communications, and new demand for services and infrastructure from the information sector have caused the growth of the telecommunications industry to outpace productivity increases and create large numbers of new jobs.

Telecommunications firms have been particularly important in providing crucial inputs to other industries, thereby contributing to the progress and growth of those sectors. By providing the advanced infrastructure and services essential to data processors and information providers, the telecommunications industry has contributed to the creation of an additional 600,000 new jobs since 1993 in data services, whose growth depends significantly on communications infrastructure (Chart 2).⁸ That figure does not count indirect employment effects in the software and computer hardware industries, or in the many other economic sectors that have become increasingly reliant on telecommunications and information technology.⁹

Entry by new firms. The structure of the telecommunications industry today is radically

⁶ FCC. *Trends in Telephone Service*. p. 19.

⁷ FCC. *Trends in Telephone Service*. p. 19.

⁸ BLS. Data for employment in the SIC category of “computer services and data processing,” excluding the subcategories of pre-packaged software and computer repair and servicing.

⁹ The number of jobs that would not exist today without the growth of the telecommunications industry is likely much higher, although hard to estimate with precision. An example of the broader “ripple effect” can be seen in data the Cellular Telephone Industry Association has compiled on employment effects of the wireless industry. Beyond the more than 130,000 jobs created directly by wireless carriers, as of the end of 1998 there are an estimated 260,000 sales and distribution jobs, 45,000 manufacturing jobs, and over 600,000 support service, construction and product development jobs related to wireless. Such multiplier effects exist in all sectors of the telecommunications industry.

different from that of 15 years ago. Numerous firms have entered each sector of the telecommunications market, with the number of public telecommunications companies swelling from under 100 in 1984 to over 200 in 1993 and surging to just under 400 in 1997. In critical sectors like local telephone service, the majority of entrants are private companies not counted in the above figures. The Association for Local Telephone Services (ALTS) lists 145 private companies in the local exchange market alone. Consolidation and acquisitions keep the number of companies in flux, but market data show that many of the fastest growing and most successful firms in the industry are unrelated to AT&T, its Regional Bell Operating Company progeny, or any of their subsequent spin-offs. In the long-distance, local, and equipment sectors of the telecommunications market, small, recent entrants have outpaced larger and more established firms in their rate of growth of both market capitalization and revenue.

Competition and market value. When concentrated or monopoly industries become competitive, economic theory suggests that, unless the market grows, profits decline as rival firms offer lower prices and transfer more value to consumers. What is good for customers may be viewed differently by shareholders. It is thus indicative of growth and innovation in the telecommunications market that, despite major changes in the regulatory environment, increased competition, lower prices, and some predictions to the contrary, the market value of public telecommunications firms since 1993 has kept pace with the soaring U.S. stock market and increased by over \$800 billion—more than doubling in size (Chart 3). The many private companies have created substantial, additional value and investment. More than half of this growth is from companies that did not exist prior to the breakup of AT&T's integrated monopoly in 1984.¹⁰

New infrastructure. The growth of the telecommunications industry has led to construction of more advanced infrastructure. The conversion of the wireless industry to digital technology and expanded use of fiber optic cable in wireline systems are two examples. FCC

¹⁰ Calculated using Compustat data.

figures show that from 1993 through 1997, fiber deployment increased from 2.3 million to 3.4 million miles in long-distance networks, from 6.6 million to 12.2 million miles in incumbent local telephone networks, and from 0.2 million to 1.8 million miles in competitive local exchange networks.¹¹ Fiber mileage overall increased an estimated 16 percent in 1997 alone. The above figures are estimates based on incomplete data. Actual fiber capacity by the end of 1998 was almost certainly much higher. Moreover, the above data do not include the 800,000 fiber miles in place by the end of 1998 in systems financed by the Rural Utilities Service of the United States Department of Agriculture, or the fiber systems installed by others such as electric utility companies or state governments.¹²

Infrastructure that will advance the telecommunication sector, and the consumers and industries that increasingly rely on it, continues to develop in circuit-switched telephone networks as well as in data networks, satellite operations, and cable systems. The current emphasis is on expanding the broadband connections available to households and businesses. New entrants into all of those sectors are constructing new facilities and upgrading existing ones, and promise to provide an increasing range of services on more competitive terms for consumers.

¹¹ Federal Communications Commission. 1998. *FCC Fiber Deployment Data - End of Year 1997*.

¹² United States Department of Agriculture. 1998. *1997 Statistical Report Telecommunications Borrowers*. p. 33.

Chart 1 Telecom Services and Equipment Revenue

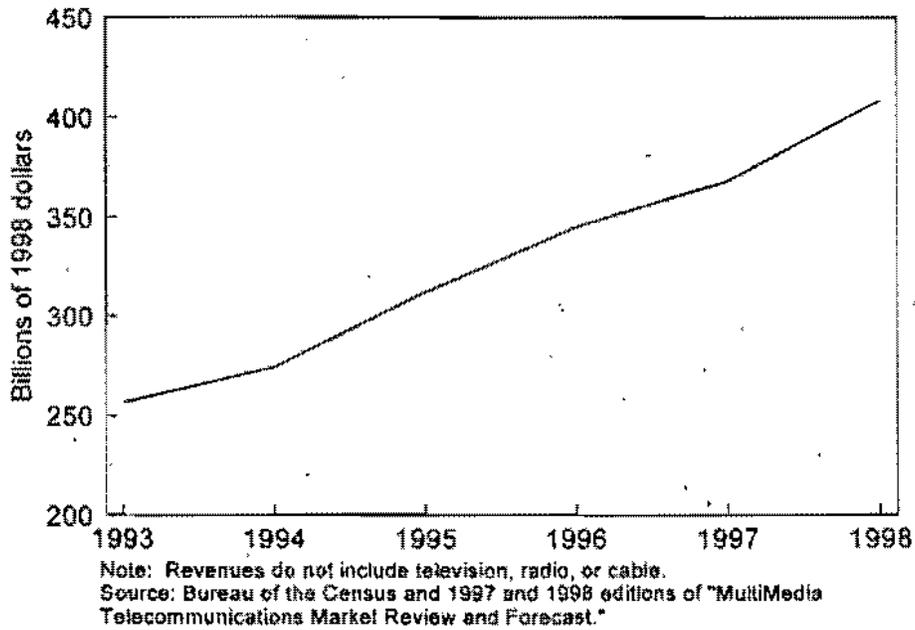


Chart 2 Employment in the Telecom Industry

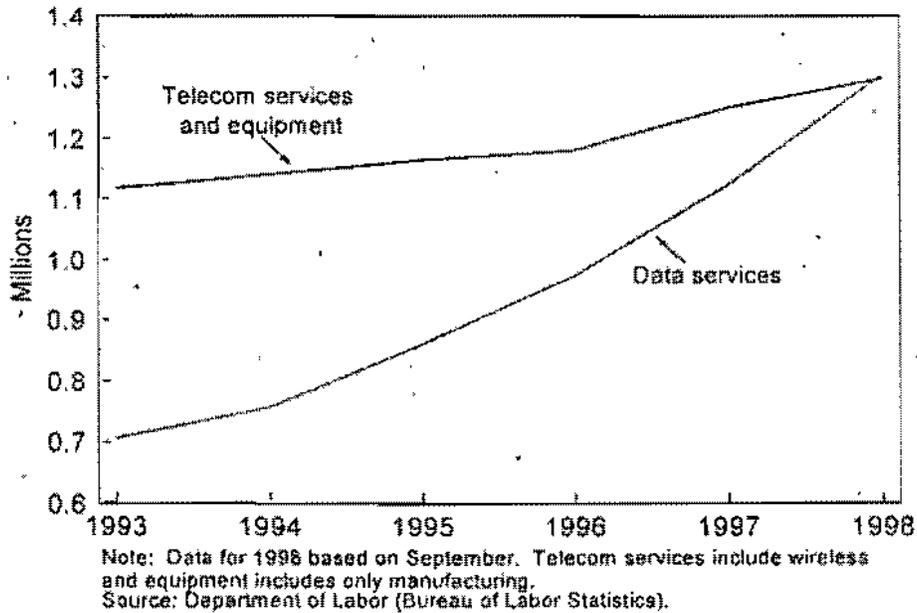
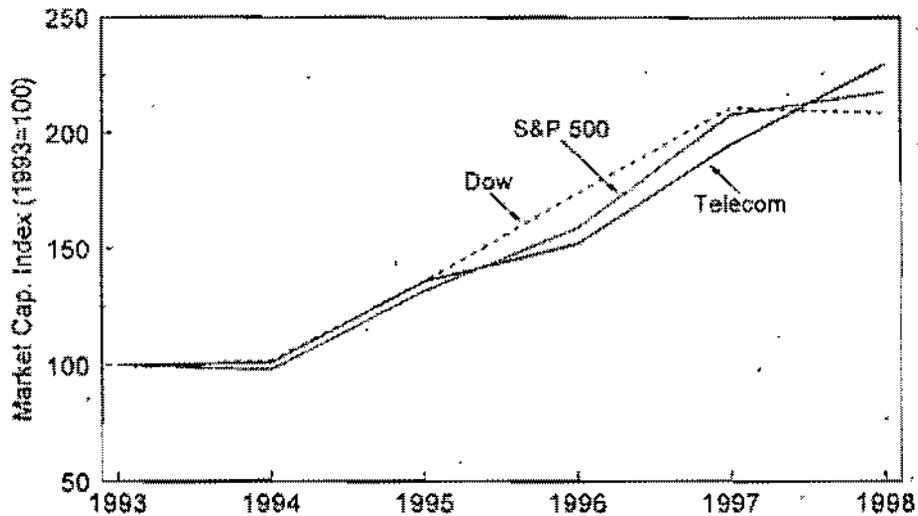


Chart 3 Market Capitalization of Telecom Industry
Compared to Market Indexes



Note: 1998 data is for Q3.
Sources: Compustat and Haver Analytics.

Long-Distance Telephony

Long-distance telephone service was for decades a monopoly of AT&T. That monopoly was attacked at the margins in the 1970s and early 1980s and more fully after the Department of Justice's antitrust suit successfully opened the market by breaking up AT&T in 1984. While AT&T's share of long-distance revenues at first eroded slowly against competition by MCI and Sprint, it has declined from over 90 percent in 1984 to under 50 percent today.¹³

Since the 1980's, increasing numbers of residential and business customers have been offered subscription plans and incentive programs that lower their actual long-distance prices below the basic tariff rates, or posted prices. While the tariff rates fell steadily through the 1980s and then, starting in 1991, began to rise slightly, the proliferation of discount options has meant that the basic tariff rate alone overstates actual prices paid in most cases. With incentive programs and low-rate plans available not only to high volume callers, but also to customers whose monthly long-distance bills average as little as \$10, it is extremely difficult to calculate how much particular customers are paying per minute of long-distance use. But one indication of actual prices is the FCC's data on average revenue collected by long-distance companies per minute of usage. By this measure, effective rates have declined steadily over the last five years (Chart 4). Long-distance usage, meanwhile, went from about 370 billion minutes in 1993 to 500 billion minutes in 1997 (Chart 5).¹⁴ This increase is partly a function of the availability of lower rates, but also of an outward shift in long-distance demand due to increased transport of data and information.

The combination of lower long-distance prices and increased long-distance usage has been driven by competition. In the past five years, many new firms have entered the long-distance market both as resellers and by building their own facilities. According to FCC data,

¹³ FCC. *Trends in Telephone Service*. pp. 55, 58.

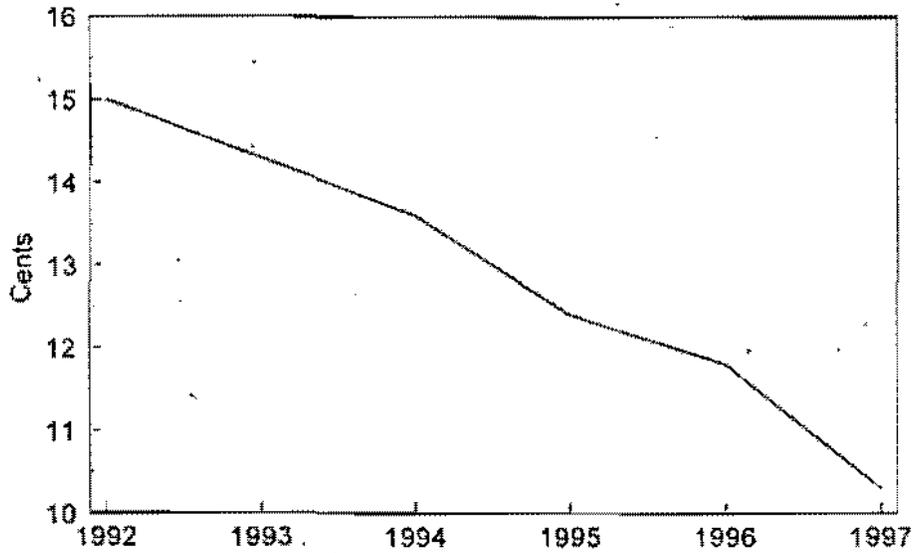
¹⁴ FCC. *Trends in Telephone Service*. p. 63.

the numerous companies with tiny individual market shares raised their collective share by 7.5 percentage points—from 12.3 to 19.8 percent of the market—from 1993 to 1997, and together have made the largest market-share gains in the long-distance market.¹⁵ That small firms have become more competitively significant both as a group and individually is indicated by the expanding list of firms whose individual shares are reported by the FCC. New carriers have continued to bring additional competition to the long-distance market, in some cases deploying substantial new facilities. There has also been entry into the market by 1010-xxx “dial-around” services and consumer substitution of the Internet for increasing amounts of data and voice traffic. Recent data show a dip in long-distance prices that corresponds to this entry.

The substantial competitive advances in the long-distance market do not preclude benefits from further entry. In addition to the possibility of even lower rates through competitive erosion of existing profit margins, one of the principal benefits of additional competition could arise from more widespread offerings of bundled local and long-distance services. Most observers have concluded that such bundled offerings would be attractive to consumers—particularly residential consumers—and may create significant cost-saving opportunities (from joint marketing, billing, etc.) for carriers that would lead to lower prices. Greater availability of such bundled offerings depends on the abilities both of long-distance carriers to be effective providers of local service, and of the Bell companies and other local carriers to offer long-distance service. Thus, completion of the local market-opening process required by the 1996 Act, which will enable such cross-entry to occur, can yield additional consumer benefits.

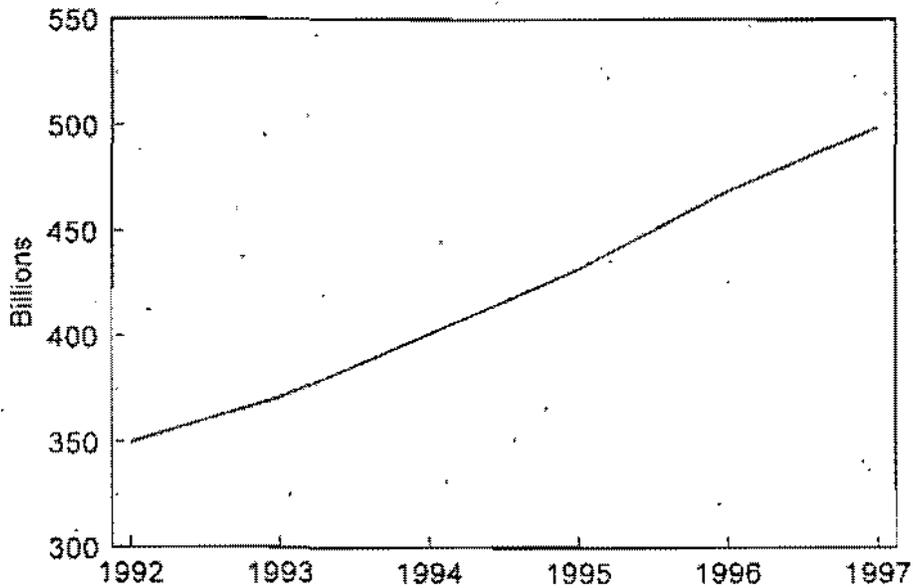
¹⁵ FCC. *Trends in Telephone Service*. p. 55.

Chart 4 Average Revenue Per Minute for Long Distance Calling (All Domestic Interstate Switched Services)



Source: FCC report "Trends in Telephone Service." July 1998.

Chart 5 Total Minutes of Long Distance Calling



Source: FCC report "Trends in Telephone Service." July 1998.

Local Telephone Service

After the 1984 divestiture of AT&T, local telephone service remained a franchise monopoly throughout the United States. The regional "baby Bells" and GTE were, and remain, the largest local-service providers, while over one thousand independent companies and cooperatives serve small, primarily rural, territories. The regulatory barriers to entry into the local market were substantial and, for the most part, within the jurisdiction of state public utilities commissions. A variety of justifications were advanced for local monopolies: the economics of "natural monopoly," preserving geographical rate averaging or other cross-subsidies that support universal-service goals, and ensuring timely network upgrades and extensions. Competition was eventually allowed in the provision of enhanced services and access to the long-distance network, but not generally in switched, local voice service.

The 1996 Act radically changed that regulatory environment by pre-empting and prohibiting regulations that protect monopolies over local telephone service. The Act thus dismantled a legal and administrative structure that had evolved over decades and replaced it with a fundamental rule: the local telephone market must be open to competition. The Act pushes this principle beyond the regulatory agencies to the incumbent local exchange carriers ("ILECs") themselves. It requires incumbent local companies to open their networks so competitors can "interconnect" (*i.e.* exchange traffic) with incumbent networks and lease "elements" of the incumbent networks (facilities like switches and customer lines) that the entrants lack.

Competitive entry since the Act has focused principally on full-service, local telephony for urban business customers. Residential local service has seen some competitive entry but has not developed in a manner comparable to business service. The market opening provisions of the 1996 Act have also spurred entry by firms providing high-speed data services to local exchange customers over unbundled loops leased from the incumbent carriers.

Progress by the CLECs: Competitive local exchange companies ("CLECs") have invested billions of dollars and have come to employ over 50,000 workers since 1992.¹⁶ Several of these companies started as competitive access providers that offered business customers bypass of the local exchange and connection to the long-distance network at lower prices. Some CLECs began to acquire the numbering codes necessary to operate competing local switches as early as mid-1994,¹⁷ but little competing service actually existed. Since the 1996 Act, when CLECs began to acquire numbering codes more rapidly and, in addition, were able to enter the market for switched, local voice service through resale and use of the ILEC's unbundled network elements, they have captured between 2 and 3 percent of local lines from the incumbents (Chart 6). Because competitors have focused on serving the largest and most profitable customers first, the business they have won represents about 5 percent of the local services market measured by revenues (Chart 7).¹⁸ Current data show local telephone revenues overall to be growing about 5 percent annually, driven by the demand for data and Internet service and for "vertical features" like voice mail and caller ID. The shares the CLECs are gaining are thus of an expanding market.

Recent data show the publicly traded CLECs to be gaining between 600,000 and 700,000 customer lines per quarter, most of them business customers (Chart 8).¹⁹ It would take the CLECs about ten years to capture half the 60 million business lines now in service if they continue to add lines at the current pace. Of course, both the number of business lines and the rate of market growth of the CLECs are likely to change, making the actual rate of market share change uncertain. But as a benchmark, it took more than a dozen years after the 1984 divestiture.

¹⁶ Association for Local Telephone Service. Hereafter, "ALTS."

¹⁷ FCC, Industry Analysis Division. 1998. *Local Competition*. p.55.

¹⁸ Merrill Lynch. 1998. *CLEC Vital Signs: Update For 3Q98 Results and Trends*. Table 11.

¹⁹ Merrill Lynch. 1998. *CLEC Update: Continued Weakness in the Sector Creates a Great Buying Opportunity*. p. 26.

for long-distance competitors to gain a 50 percent share of market revenues, and their shares of pre-subscribed lines and long-distance access minutes has not yet reached that level.²⁰

More than 70 percent of lines served by CLECs are through resale of the incumbents' services or through combination of the ILECs' unbundled network elements with the CLECs' own facilities.²¹ Competition by new entrants serving customers mostly on their own networks—"facilities-based" competition—accounts for the remainder. However, it is estimated that more than one third of the lines added by the CLECs in the third quarter of 1998 were on the CLECs' own networks. This very slightly raised the proportion of total CLEC lines that are independent of the ILECs' facilities to 27 percent, and suggests that facilities-based competition for local service is becoming more common.²² The growth of facilities-based competition relative to resale is also documented by the Telecommunications Resellers Association, which reports that, from 1995 to 1998, the proportion of its members that owned or leased facilities (as opposed to competing through pure resale) increased from 34 percent to 54 percent.²³ The FCC estimates that the number of unbundled loops leased by CLECs from large incumbents in order to provide partially facilities-based service increased by 10 percent in the third quarter of 1998.

The number of switches owned by CLECs grew from 65 before the Act to nearly 700 by the end of 1998.²⁴ As new entrants continue to build out their networks, the relative growth of facilities-based service will likely accelerate. Several sources of data show the CLECs to be building out their fiber networks at a fast clip, although the data are sketchy and incomplete.

²⁰ FCC. *Trends in Telephone Service*. pp. 45, 46, 49.

²¹ Merrill Lynch. 1998. *CLEC Vital Signs: Update For 3Q98 Results and Trends*. p. 6.

²² Merrill Lynch. *Op. Cit.*

²³ The Telecommunications Resellers Association. 1998. Report submitted to the House Commerce Committee.

²⁴ ALTS.

Merrill Lynch estimates from its survey of public CLECs that those companies added over 40,000 route miles of fiber to their networks in each of the first three quarters of 1998, and that the rate of deployment was increasing through that period.²⁵ FCC data show the amount of fiber deployed by CLECs to have tripled from 1993 to 1997, with particularly rapid deployment from 1994 to 1997.²⁶

The marketplace clearly expects local competitors to flourish. Although CLECs are still in the early stages of accumulating market share, and only one has so far posted a profit, they have created nearly 20 percent of the growth in local telecommunications market value since 1993.²⁷ The market capitalization of CLECs has gone from almost nothing to over \$30 billion since 1993.²⁸ The value of the numerous privately held CLECs is not captured by the above figure. Employment by competitive local service companies has also grown dramatically since the 1996 Act. Data from 23 small, local entrants that voluntarily reported employment figures to the Association for Local Telephone Services (ALTS) show employment increasing by over 100 percent in 1998 alone—from roughly 9,000 jobs in January 1998 to over 18,000 jobs at year's end in the sample companies alone. The ALTS sample did not include employment data for large companies like MCI WorldCom, AT&T, Sprint or others that have entered the local market, nor does it account for the vast bulk of CLECs. The growth rate, however, is indicative of the investment being committed to local competition. CLECs are plying their trade in all of the top 100 urban markets in the United States, and in 250 smaller business trading areas as well.²⁹

²⁵ Merrill Lynch. *Op. Cit.* p. 7. Data from several companies were not available to be included in that calculation.

²⁶ Federal Communications Commission. 1998. *FCC Fiber Deployment Data - End of Year 1997*. p. 40.

²⁷ Compustat data.

²⁸ ALTS data.

²⁹ ALTS data.

Residential versus business competition. Competition in the provision of local telecommunications services to residential customers has proceeded more slowly and tentatively than competition to serve business customers. Some CLECs target business customers exclusively. Comptel, an industry association representing CLECs, recently surveyed its members about local competition. Twelve of seventeen respondents reported providing residential service in at least one state. Overall, of the roughly 5 million lines estimated to be served by CLECs, less than one third probably belong to residential customers. The United States Telephone Association, the industry association for incumbent local carriers, reports that about 1.3 million residential lines are being resold by CLECs.³⁰ The FCC makes a similar estimate of 1.2 million lines.³¹

Resale remains the primary means by which CLECs are serving residential customers. The Telecommunications Resellers Association (TRA) represents numerous competitors, 175 of which provide local phone services through a combination of resale and deployment of their own facilities. Of the customers served by TRA's members, 21 percent are reported to be residential. And 94 percent of the residential business is through pure resale rather than through use of facilities that the CLECs either own or lease from the incumbent.³² The FCC finds that, while CLECs serve 1.2 million residential lines through resale, they serve about 260,000 customers through a combination of their own facilities and unbundled network elements leased from the ILECs.³³ Fully facilities-based competition by CLECs for residential customers, at least on a broad scale, seems distant. Such competing facilities may come sooner from cable entrants into local telephony. AT&T has made acquisitions and formed a joint venture to provide telephone service over cable systems that pass over 40 percent of American households. Other cable

³⁰ United States Telephone Association. 1998. *Local Market Wide Open to Competition*.

³¹ Federal Communications Commission, Industry Analysis Division data.

³² The Telecommunications Resellers Association. 1998. Report submitted to the House Commerce Committee.

³³ Federal Communications Commission, Industry Analysis Division data.

systems have slowly been upgrading their networks and marketing local phone service to their cable customers.

There are several possible explanations for why competition has been slower to develop in the residential local service market than in the business market. Some parties point to problems of compliance with the 1996 Act—the FCC has not yet found any of the incumbent carriers to have satisfied all of the Act's market-opening requirements. But, the pace of residential competition is also strongly affected by underlying economic factors. The economics of residential local service—with its regulated rates and comparatively lower sales of profitable, vertical services—arguably do not make pursuit of the average residential customer as interesting a business prospect when there is lower-hanging fruit in the business market.

Regulation keeps rates for residential local service low, and the revenues gained from access charges that long-distance carriers pay to local networks are generally lower for residential than for business customers. But the costs of providing a phone line are about the same for residential and business customers, making the latter a source of higher profit margins. A CLEC incurring the fixed costs of entry will therefore recoup its investment more quickly by focusing on the business sector. Moreover, marketing costs per line are probably lower for business customers, which often have multiple lines, than for residential customers that typically have one, and at most two or three, lines. A reflection of the relative desirability of business customers, and of the greater geographic concentration of business customers, is that the switching centers in which CLECs have collocation arrangements serve 50 percent of ILEC business lines, but only 35 percent of residential lines. Moreover, those switching centers serve at least 57 percent of the incumbents' high-capacity lines, which are connected to the largest and most profitable business and government customers.³⁴

Regulation also produces below-cost rates for local service in areas where the costs of

³⁴ FCC, *Local Competition*, p.38. Also, FCC Industry Analysis Division data.

providing service are high, and above-cost rates for local service in areas where the costs of providing service are low. In other words, revenues from above-cost rates implicitly subsidize below-cost rates. Entrants thus have artificial incentives to provide service to customers paying above-cost prices (e.g. business customers and urban residential customers) and artificial disincentives to serve those customers paying below-cost prices (e.g. rural customers). The FCC and state regulators are working to restructure the current system of rates for local telephone service in a way that both preserves universal service and makes serving residential and rural customers more attractive for competitors. But until regulation of residential and rural rates are made competitively neutral, entry incentives will remain skewed.

The residential market remains an area in which competition needs to develop further to meet the goals of the 1996 Act. But developments in local competition so far are not necessarily as limited or unpromising as some portray them to be. History indicates that roll-out takes time and generally starts, for sound economic reasons, with higher-revenue customers. The construction of the original Bell System itself is a lesson in the move from commercial centers to more rural areas. And Bell was merely repeating a strategy followed decades before by Western Union in building out its telegraph network. MCI's entry into the long-distance market similarly started with private business service, went to public business service, and eventually to residential offerings.

The aggressive entry by CLECs into the business market, and their construction of facilities for both voice and data, are likely to have benefits for residential customers over time. For example, CLECs have been constructing urban fiber networks that pass not only businesses, but apartment houses as well. Once the infrastructure is in place, serving residential customers in "multiple dwelling units" becomes easier and may entail only incremental cost. As the most profitable customers provide the CLECs with the revenue necessary for effective entry into the local market, competitors will be able to expand service offerings to customers from which they earn less return.

Because of the long institutional history of local monopoly and the economic complexity of entry into the local residential market, the uneven development of competition does not in itself show that the 1996 Act's market-opening provisions are a failure or should be changed. Indeed, the developments in the business market suggest otherwise. To ensure that the potential for residential benefits is realized, continued application of the proven, competitive principles of the Act is the course better supported by the economic evidence.

Data CLECs and broadband competition. A developing area of local competition has been in the market for high-speed data services. Numerous companies have taken advantage of the 1996 Act to lease customer lines ("loops") and space in the incumbents' switching centers ("collocation" space) in order to offer customers digital subscriber line (DSL) service, primarily for high-speed access to the Internet. DSL technology uses special modems to transmit digital information over existing copper lines. Most of the data CLECs are still small, privately held companies. Although there is little available data on DSL deployment, it is estimated that about 30,000 lines are so far being served. By comparison, about ten times that number of customers receive broadband service from cable companies over "cable modems."³⁵ But competition in data services over the telephone network shows promise. Data CLECs have invested heavily in facilities, pushed DSL prices down, and created thousands of new jobs in the services and manufacturing sectors. Several competitive DSL providers have entered multiple markets in which they compete against each other, the ILECs, and cable modem providers. For example, competition among broadband service providers in the San Francisco area has recently pushed DSL service prices down to about \$40 per month.

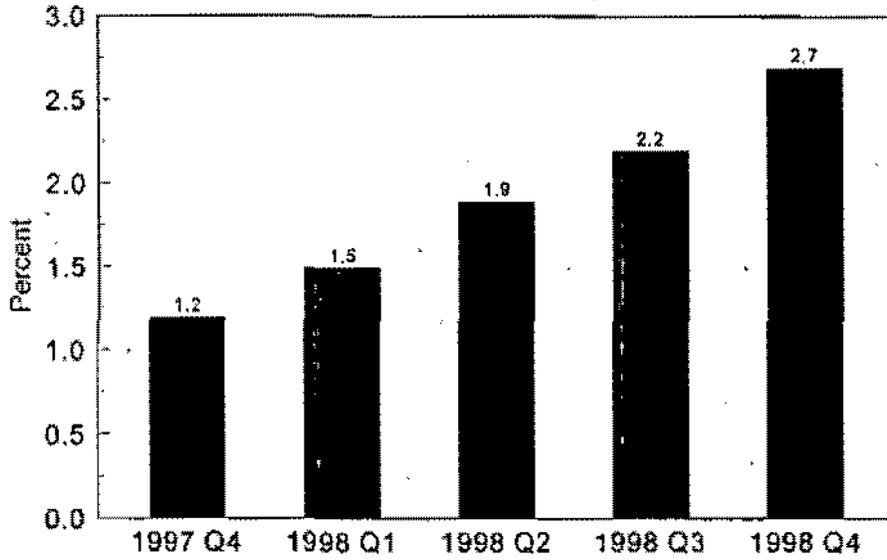
Competition in DSL service faces several challenges as it grows. First, DSL must overcome certain technological impediments. Transmission via DSL is generally most effective for customers located a short distance, for example about three miles, from the central switching

³⁵ Lawyer, Gail. 1998. "Leader of the Pack" in *X-Change*, October 1998, p.22. More formal data are not yet reported.

office. Performance of DSL transmission declines with loop length, but varies also with condition of the loop and the quality of equipment attached to the loop. Technological advances are starting to provide improvements, but for now DSL remains an option primarily in densely populated areas where loops are short.

A second challenge for DSL providers, like other CLECs, is getting collocation everywhere they need it, and therefore in gaining access to some customers lines. As more competitors have entered the market and sought collocation in central offices serving the most desirable regions, entrants have reported difficulty in negotiating collocation arrangements. Technical issues such as whether collocation at remote terminals outside of central offices is necessary to serve customers who do not have a direct copper line to the central office, is another unresolved problem for CLECs. These challenges are intensified by the fact that incumbent local service providers offer both DSL service themselves and control inputs—notably loops and collocation space—needed by their DSL competitors. Nonetheless, the DSL market is growing and, if the above challenges can be met, data CLECs could grow into a substantial competitive presence in a greater number of markets and offer a broader range of services than is the case today.

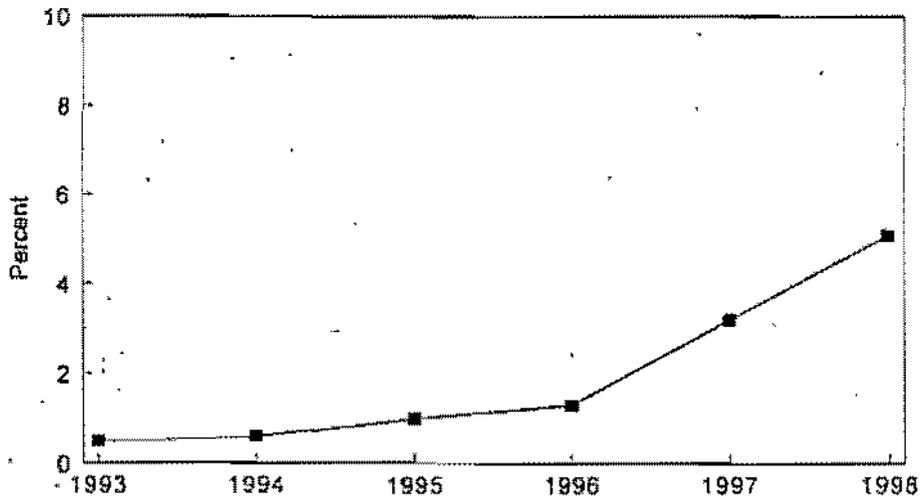
Chart 6 CLECs' Share of Local Market by Lines



Note: 1998 Q4 is estimated.

Source: Merrill Lynch industry report on local telecom services, November 1998.

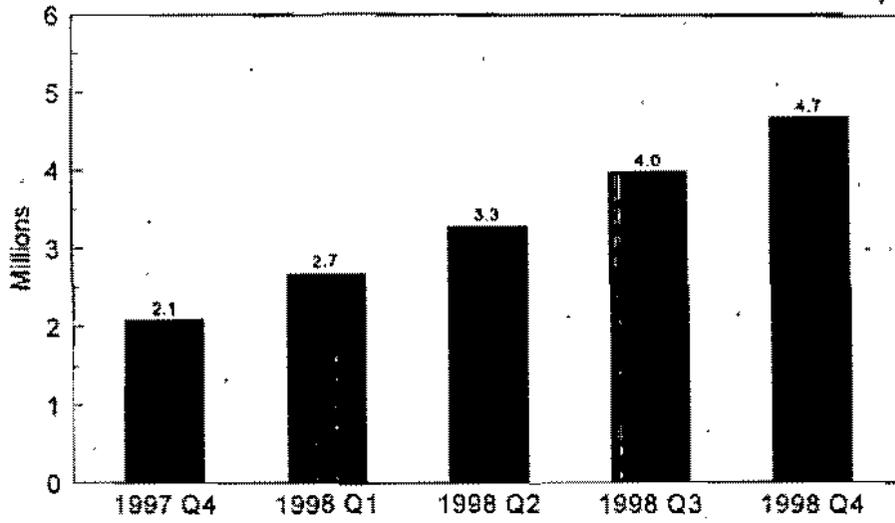
Chart 7 Share of Local Service Revenues by New Entrants



Note: The 1998 figure is an estimate for the fourth quarter.

Sources: Merrill Lynch industry report on local telecom services, November 1998. FCC report "Trends in Telephone Service," July 1998.

Chart 8 Total Local Access Lines in Service
(New Entrants)



Note: 1998 Q4 is estimated.

Source: Merrill Lynch industry report on local telecom services, November 1998.

Wireless Telephone Service

The wireless telephone industry has experienced remarkable growth in the past 5 years. From 1993 to 1998, the number of Americans subscribing to cellular service grew from about 16 million to over 60 million (Chart 9).³⁶ Policies that set the stage for increased competition in the wireless market and fostered investment in advanced digital technology directly contributed to this growth.

The FCC assigned the first licenses to use radio spectrum for cellular telephone service in 1983, introducing competition through a "duopoly rule" under which one license in each market was given to the incumbent local telephone provider and another to an unaffiliated competitor. By June 1985, cellular companies altogether had just over 200,000 subscribers, 600 "cell sites" (each site contains the transmission equipment that serves a local cell), and 1,700 employees.³⁷ In June 1995, subscribership had climbed to 28 million, a total of 20,000 cell sites were operative, and the number of people employed by wireless service companies was 61,000.³⁸

In 1995, as authorized by the President and Congress in the Omnibus Budget Reconciliation Act of 1993, the FCC held the first auctions for broadband spectrum to be used for digital "personal communications services" (PCS), creating new wireless licensees in U.S. markets. As the successful bidders entered the market, and as subsequent licenses were auctioned, the duopoly market structure gave way to full-fledged competition among multiple providers. By the middle of 1998, there were nearly 61 million cellular subscribers and over 57,000 cell sites, and by end of 1998, over 160,000 Americans were holding jobs with wireless

³⁶ Cellular Telecommunications Industry Association. 1998. *Semi-Annual Data Survey: June 1985 to June 1998*. Hereafter, "CTIA Survey results."

³⁷ CTIA Survey results.

³⁸ CTIA Survey results.

telephone companies (Charts 9, 10, and 11).³⁹ The average monthly bill for wireless telephone service fell by more than half from its level a decade earlier, probably reflecting both declining prices and changes in average monthly usage as more individual, as opposed to business, customers used wireless service.⁴⁰

Today, more than 200 million Americans, or over 80 percent of the population, live in wireless service areas with at least 1 new competitor to the 2 original cellular systems, and more than half of all Americans live in areas with at least 3 new competitors.⁴¹ This new competition, as well as increased investment in new technology, has caused prices to plummet while increasing the variety of available calling plans. Although reliable data on revenues per minute are unavailable, existing price and billing data indicate that wireless telephony is becoming ever more affordable. One study finds that in 1997, median prices per minute—what the typical user pays—fell as much as 30 to 40 percent for residential users and 30 to 50 percent for business users, due primarily to new PCS competition.⁴² As mentioned, the average monthly bill for mobile customers has fallen by more than half in the last decade.⁴³

Wireless telephony (cellular, PCS, and ESMR) is now a nearly \$30 billion industry, as measured by service revenues, growing an average 24 percent a year since 1993.⁴⁴ Capital investment, a leading indicator of future industry growth, has now grown to a cumulative \$50

³⁹ CTIA Survey results. Also, BLS employment data.

⁴⁰ CTIA Survey results.

⁴¹ Federal Communications Commission. 1998. *Third Annual CMRS Competition Report*. Appendix B, p. B-4. Hereafter, "FCC CMRS Report."

⁴² FCC CMRS Report. pp. 19-20.

⁴³ CTIA Survey results.

⁴⁴ CTIA Survey results, adjusted for inflation using the Consumer Price Index (CPI).

billion (Chart 12).⁴⁵ Extraordinary growth in subscribership is the cause: more than 60 million Americans, or more than 1 in 4 American adults, now subscribe to a mobile service. That is nearly 60 percent higher than in 1996 and five times the number in 1993.

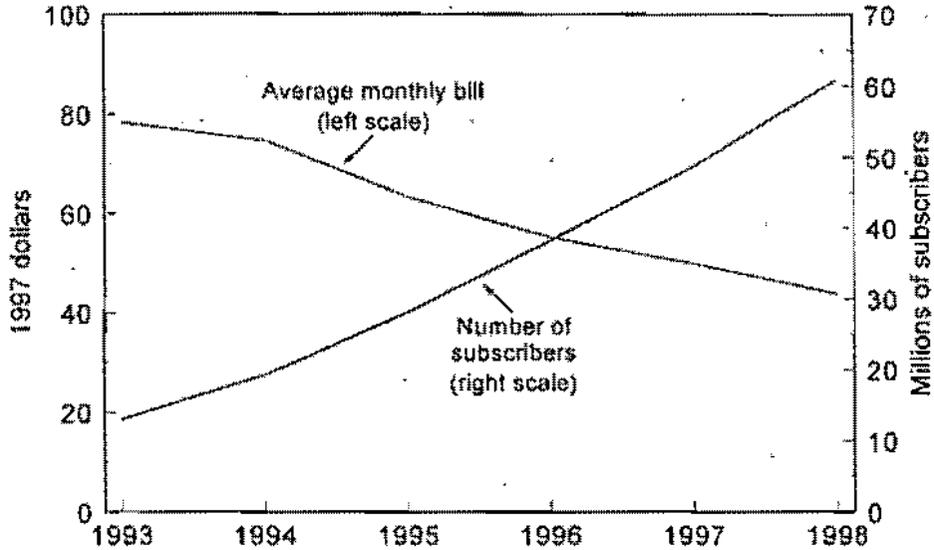
There is anecdotal evidence that wireless telephone service is beginning to substitute on the margins for traditional (wireline) telephone service; and it may do so increasingly as technology improves, competition and subscribership increase, and prices fall. Wireless companies have excess capacity on their networks and have been able to offer packages that provide a maximum number of minutes—whether local or long-distance, and from anywhere in the country—for a fixed price. In the second half of 1998, prices for these packages fell as low as \$50 for 500 “anytime, anywhere” minutes. Such low-priced packages have the possibility of making wireless service an alternative to wireline service for some users, particularly those who travel a lot or desire an additional line from home.

In addition to the main wireless telephone technologies of cellular, PCS, and ESMR discussed above, wireless communications also encompass such services as paging, SMR, and fixed point-to-point, as well as such new services as fixed wireless local loop and Third Generation mobile services. These services could have a profound effect on growth and competition in telecommunications, not just in the wireless market, but in the local, long-distance, and advanced services markets as well.

Further challenges remain for the wireless industry. As Americans increasingly demand information services and mobile access to those services, data traffic will become an increasing component of wireless telephony. As wireless use grows and services expand, technologies to manage increased traffic demands will need to be developed. But the success of the industry so far in innovating and growing to the benefit of American consumers leaves little doubt that wireless communications will be a central and growing part of telecommunications in the future.

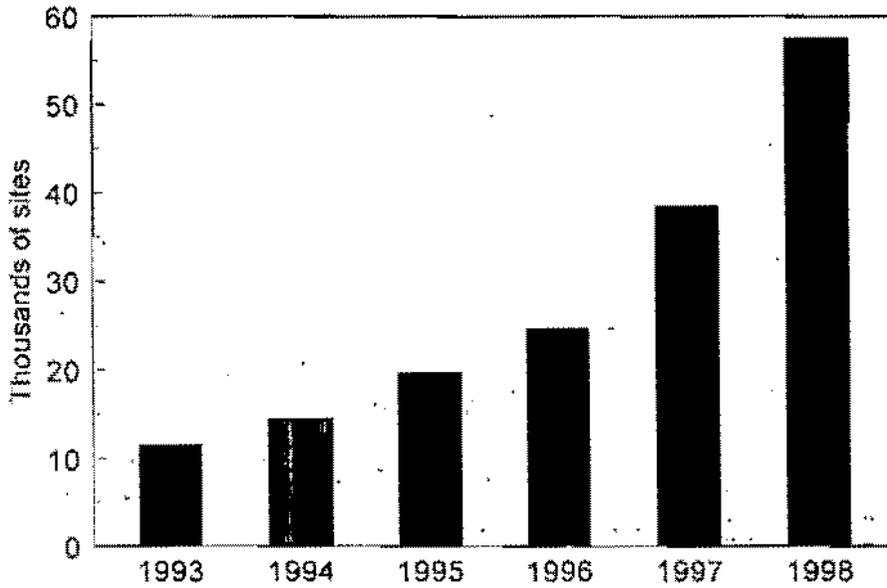
⁴⁵ CTIA Survey results.

Chart 9 Wireless Subscribership and Average Monthly Bill



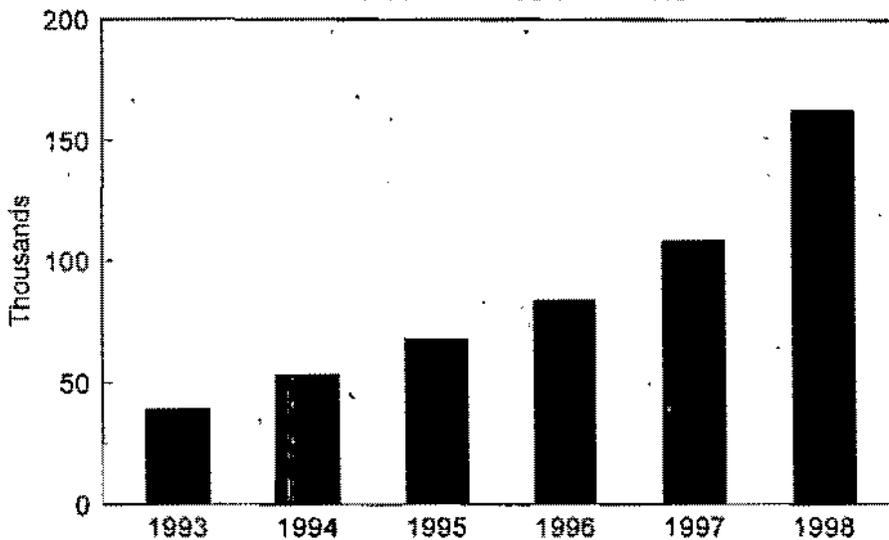
Source: Cellular Telecommunications Industry Association.

Chart 10 Cell Sites in Commercial Use



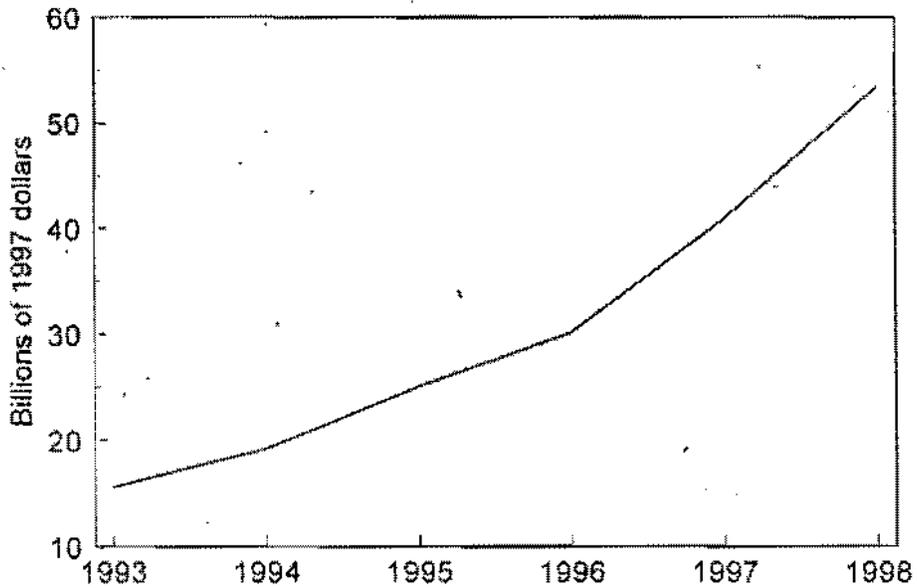
Source: Cellular Telecommunications Industry Association.

Chart 11 Direct Employment by
Wireless Service Providers



Source: Cellular Telecommunications Industry Association and Department of Labor (Bureau of Labor Statistics).

Chart 12 Cumulative Capital Investment



Source: Cellular Telecommunications Industry Association.

Telecommunications Equipment

The telecommunications equipment industry in the U.S. has grown substantially. Total production in 1997 topped \$70 billion and is estimated to have reached \$120 billion in 1998, a growth of \$80 billion since 1993 (Chart 13). New service markets created by wireless auctions, the 1996 Act, and the Internet have created a large demand for innovative telecommunications equipment. The many new entrants into equipment design and manufacturing have created thousands of jobs, invested billions in producing novel solutions to technical challenges faced by new entrants and incumbents alike in providing new services, and doubled U.S. exports of telecommunications equipment from about \$13 billion in 1993 to over \$25 billion in 1997.⁴⁶

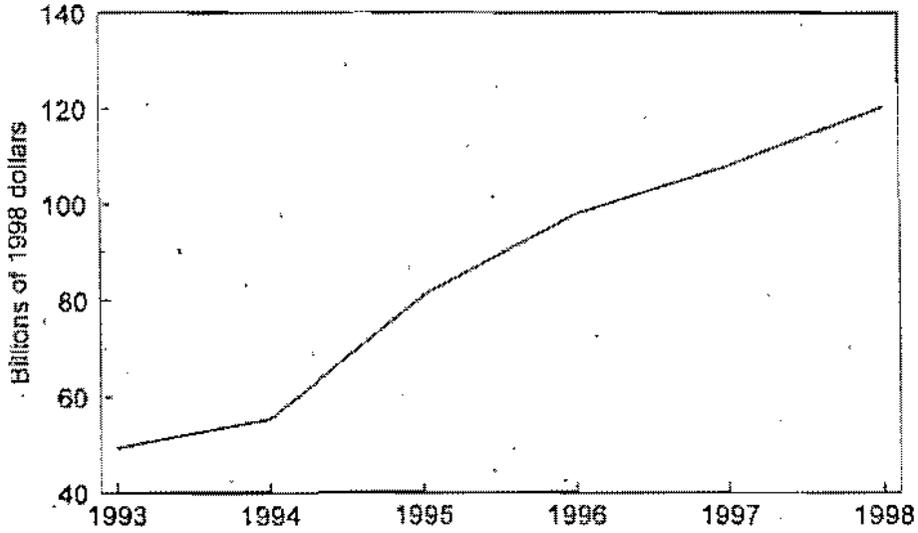
There are now more than 100 publicly traded companies that list telecommunications equipment as their primary line of business. Nearly 50 additional public companies list their primary line of business as data networking equipment. The joint market capitalization of traditional telecommunications equipment manufacturers and data networking equipment makers has more than tripled since 1993 (Chart 14). Again, numerous private companies add economic value that is not captured by the market capitalization data. The telecommunications equipment market as a whole is responsible for about one-third of the value created in the telecommunications market in recent years, with data networking equipment companies growing faster than traditional equipment companies since 1994.

The growth of data networking companies reflects the shifting demands of telecommunications consumers away from conventional voice telephony and toward fast and reliable data transport. Digitization is requiring systems to provide integrated voice and data services, and competition among conventional telecommunications equipment manufacturers and newer data network equipment makers is leading to research and development along several promising paths, both wireless and wireline.

⁴⁶ U.S. Department of Commerce.

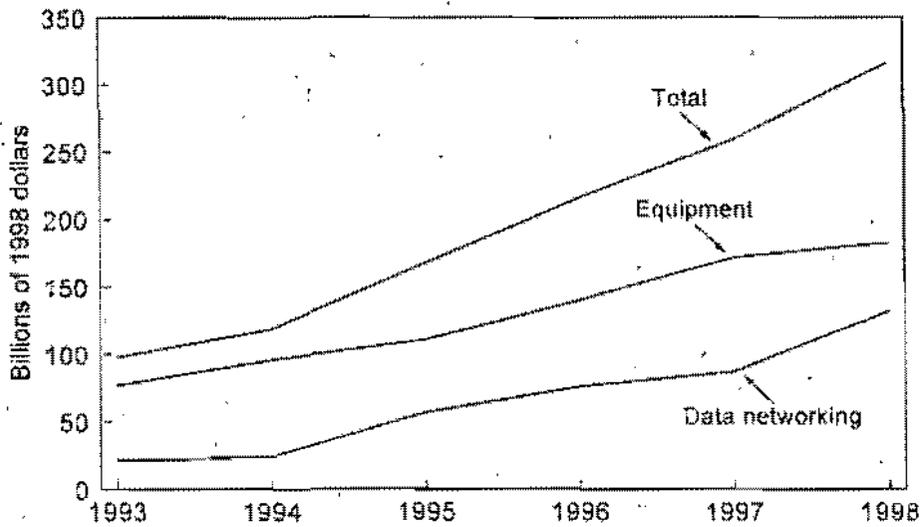
The telecommunications equipment industry will play a crucial role in solving the myriad technical problems faced by new communications service providers, whether they be cable systems, data CLECs, or full-service CLECs seeking to build out their own facilities. The equipment industry in the United States also faces substantial global competition, particularly in the area of mobile communications, and U.S. policy is working through appropriate channels to prevent harm to American manufacturers from the technical standards adopted in various international markets.

Chart 13 Revenues of Telecom Equipment Manufacturers



Source: 1997 and 1998 editions of "Multimedia Telecommunications Market Review and Forecast."

Chart 14 Market Capitalization of Telecom Equipment and Data Networking Firms



Note: Data for 1998 based on Q3.
Source: Compustat.

The Internet

The pace of technological advance, the importance of forward-looking infrastructure, and the growing desire for information are all manifest in the rapid growth of the Internet and its associated industries. This relatively young sector of the U.S. economy has been boosted by the successful confluence of a market-oriented and non-regulatory government policy, private investment and innovation, and the public's growing demand for information services.⁴⁷ Regulatory forbearance and policies to encourage usage, as well as continuing investment in information infrastructure, have made possible unprecedented growth in both the development and adoption of this communications medium. For example, the Administration has successfully opposed taxation on Internet usage: the Internet Tax Freedom Act creates a 3-year moratorium on new taxes for electronic commerce, and the World Trade Organization has agreed to place a moratorium on customs duties for e-commerce. The Administration has also supported protection of intellectual property rights in the digital environment and has worked to establish a legal framework for electronic contracting. Furthermore, the Next Generation Internet Research Act authorizes an initiative to provide universities with the most advanced connections to the Internet and to support long-term research on Internet technologies.

The Internet's evolution from a government-sponsored research project to a global network that connects individuals, businesses, and institutions of all kinds has been propelled by increasing computing power at falling prices. The digitization of information has blurred the lines between data, video, and voice, with all these types available for transmission at ever lower cost. The cost of transmitting one bit of data over a kilometer of fiber optic cable fell by three orders of magnitude between the mid-1970s and the early 1990s.⁴⁸ The cost of processing one million

⁴⁷See the *U.S. Government Working Group on Electronic Commerce, First Annual Report*, November 1998, and *A Framework for Global Electronic Commerce* issued by President Clinton on July 1, 1997.

⁴⁸Atkinson, Robert D., and Randolph H. Court. 1998. *New Economy Index: Understanding America's Economic Transformation*. Washington, D.C.: Progressive Policy

instructions per second (mips) was \$480 in 1978. By 1995, processing costs had tumbled to \$4 per mips.⁴⁹ And the cost of information processing continues to plummet, increasing the capability of the information industry and expanding the demand for information services.

Notwithstanding the technical advances mentioned above, the recent growth trajectory of the Internet would not have been possible without the grid of telephone lines, cables, optic fibers, signal processing and routing equipment that forms the "backbone" of the U.S. telecommunications infrastructure. The increasing public demand for—and provision of—fast and ready information has driven this "backbone" industry, motivating tremendous private investment and market capitalization as well as job creation. The growing demand for carrying capacity, or "bandwidth," has pushed the roll-out of yet more physical equipment and wiring, as well as the deployment of such technologies as cable modems, ISDN lines, DSL services, and new methods of digital compression.

Investment in high-capacity fiber by telecommunications systems has also grown rapidly to meet new infrastructure demands. The number of "fiber miles," calculated by multiplying the number of miles of sheathed fiber times the number of fibers in the sheathed bundle, is one measure of system capacity. As mentioned previously, the number of such fiber miles constructed by telecommunications carriers in the United States grew by about 16 percent in 1997 according to FCC estimates.⁵⁰ On the consumer end, increasing numbers of American households are purchasing additional telephone lines. Although some of these lines are probably used mostly for voice service, many are used for dedicated data lines. The number of households with additional lines grew from 8.8 million in 1993 (9.4 percent of residences) to 15.7 million in

Institute, p. 19. Hereafter *New Economy Index*.

⁴⁹ *New Economy Index*, p. 8.

⁵⁰ Federal Communications Commission. 1998. *Fiber Deployment Update*.

1996 (16.5 percent of residences).⁵¹ Those numbers have most likely grown sharply since the end of 1997 with increased use of the Internet by American consumers. Co-axial networks used by cable television systems, which increasingly now offer Internet access, are another major source of information infrastructure that will be important for bringing broadband access to residential customers.

The equipment industry has also been driven by the need for more advanced information transport. Companies engaged in manufacturing equipment for data networks are developing the advanced electronics for broadband transmission and routing of digital material—whether voice, video, or data—that innovative service providers are using to construct the networks that link users to information on the Internet and other sources.

And such advanced links are increasingly in demand. Altogether, over 35 million Internet “hosts”—computers that store sources of information on the Internet—were active world-wide by early 1998, up from 20 million only six months earlier and from fewer than 3 million in 1993 (See Chart 15). Thanks to tremendous investment in infrastructure, the United States ranks far above Japan, Germany, and the United Kingdom in public participation in the Internet, as measured by the number of hosts per capita.⁵² Only Finland has a higher concentration than the U.S. In 1993, there was roughly 1 Internet host in the United States for every 200 Americans. By 1997, the ratio had changed ten-fold, to 1 host for every 20 people—about 1 Internet host for every 4 American adults who use the Internet.⁵³ In the two years between 1995 and 1997, the number of people in the United States who used the Internet grew from about 28 million to over 73 million, or about one in four people.⁵⁴ This year, nearly one in three American adults is expected to be

⁵¹ FCC Trends, Table 19.3.

⁵² *New Economy Index*, p. 30.

⁵³ *New Economy Index*, p. 30.

⁵⁴ The estimates of adult users are from Pew survey results and the adult population of the United States. The Pew Research Center for the People and the Press. *Technology Survey 1998*

“online.” The latest Pew Center survey finds that the total number of American Internet users today is over 80 million (See Chart 16).

Recent data also show that Internet use is reaching a broader spectrum of society. In 1995 the average household income of an Internet user was over \$50,000. The latest Pew Center survey shows that the fastest growing groups of new Internet users are those with much lower income and educational levels than in the past. The survey finds that 23 percent of new users have annual household incomes below \$30,000—which is below median household income in the U.S.—and that 40 percent of new users never attended college.⁵⁵ As use expands to all economic segments of society, so too will the range of services and uses available through the Internet.

Challenges nonetheless remain. There is evidence of a “digital divide” whereby some racial and ethnic groups in the United States use the Internet disproportionately less than others. The “e-rate” program for wiring schools and public libraries, created under the Telecommunications Act of 1996, will be an important means of increasing diffusion of Internet use and ensuring that access to information is widely available. To date, the e-rate program has disbursed over \$750 million, with the goal of connecting up to 40,000 American public schools and 7,000 libraries to the Internet. Such policies ensure that an increasing spectrum of Americans will grow up with the skills to participate in an increasingly information-driven economy.

The broad reach of the Internet has made it suitable for an increasing variety of applications. “Distance learning” and telemedicine, for example, are already flourishing. Many businesses see a future in online transactions, or “e-commerce.” The volume of retail sales over the Internet more than doubled between 1997 and 1998 and electronic commerce as a whole is

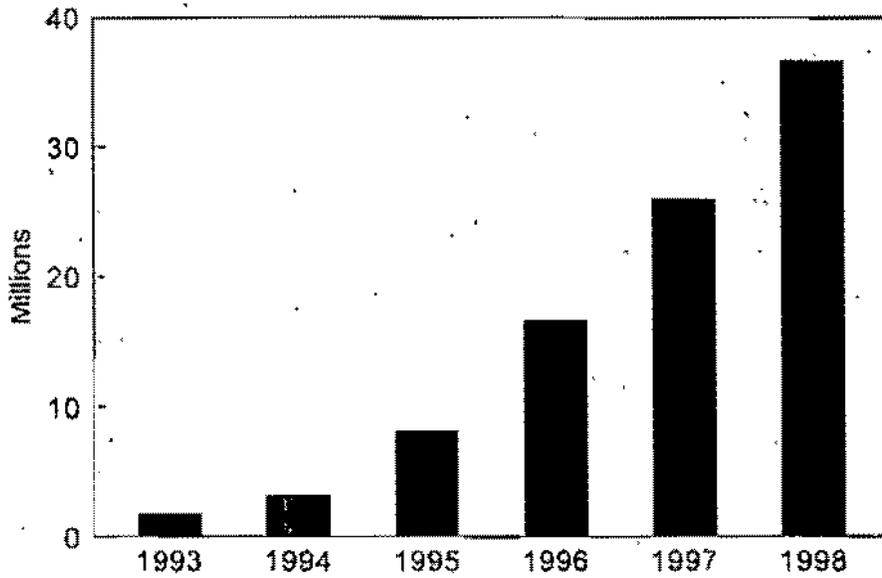
results and report, “Online Newcomers More Middle-Brow, Less Work-Oriented: The Internet Audience Goes Ordinary.” Hereafter, “Pew survey results.”

⁵⁵ *New Economy Index*. p.31.

forecast to reach \$300 billion by 2002.³⁶ At the same time, widespread and growing public participation in this medium heralds new possibilities for the dissemination of public interest information, whether political discourse, community news, health resources, or scientific research. The telecommunications system is the foundation upon which these possibilities will develop.

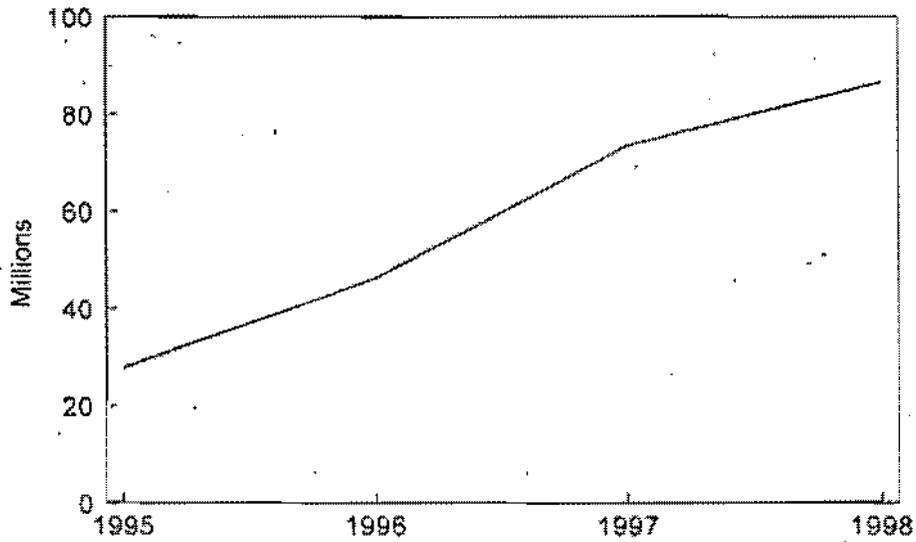
³⁶ Internet sales data from Boston Consulting Group and shop.org, *Online Retailer Survey*.

Chart 15 Growth in Internet Hosts



Source: Network Wizards, <http://www.nw.com>.

Chart 16 Growth in Internet Users



Note: Data represents the number of Americans who ever go online to access the Internet or World Wide Web or to send and receive email.
Source: The Pew Research Center's "1998 Technology Questionnaire."

Conclusions and Future Challenges

Competition and innovation have been vital catalysts for the growth of the U.S. telecommunications industry since 1993. Both of those forces have benefitted from a transformed regulatory approach that opens markets and rewards deployment of new services and technologies. In each of the market sectors examined, the path to increased output and lower prices has been the implementation of market opening policies, followed by investment, innovation, and competition. Fiber optics in long-distance networks, digital networks for wireless telephony, advanced services in the local network, and the equipment to support them, have all followed from the opening of those respective markets to competition. As a result, consumers pay less for larger amounts of long-distance service, wireless subscribership has soared as wireless rates have moved closer to those for conventional phone service, and households and businesses are finding the prices of high-speed, advanced services within reach as the services themselves become increasingly available.

While progress in telecommunications has been excellent, challenges remain and will continue to arise as technology and markets change. In the near term, ensuring that local markets continue to open, and that regulatory distortions on competitive incentives in those markets diminish, will be important. Moreover, unless the current system of rate averaging is restructured, the equitable goals of universal service policy—availability of essential services on fair terms for poor as well as rich, rural as well as urban—will be more difficult to achieve in an increasingly competitive telecommunications market. Specific competition issues like the pricing of interconnection and unbundled network elements, and the conditions on which ILECs may participate in the advanced services market, present challenges of opening markets while preserving efficient incentives to invest in and deploy new services, facilities, and R&D.

Although this report addresses the U.S. market only, there are also challenges on the international front of importance to American telecommunications consumers. The increasing volume of information and communications that flow globally make international

telecommunications infrastructure and interconnection vital to businesses, institutions and other consumers. The FCC, the U.S. Trade Representative, the State Department, and the Department of Commerce have all worked to obtain fair terms for U.S. carriers that need access to networks in foreign markets and to open those markets to competition. Much progress has been made and telecommunications markets in many areas of the world have moved from a structure of state-sponsored monopoly to open competition. It is important that bottlenecks that impose discriminatory terms on new competitors in global communications do not develop or persist at our borders. The infrastructure investment that has increased capacity, lowered prices, and supported the information economy domestically will also benefit the growth of electronic commerce and other information-intensive sectors world-wide. Insuring that the same competitive incentives that have developed domestically also develop for investment in facilities between the United States and other countries, and within other countries themselves, will speed the arrival of those benefits.

Finally, as innovative services and technologies affect the structure of the telecommunications market, telecommunications policy will more effectively serve the public interest if it retains sufficient flexibility to change when regulatory assumptions no longer hold. The changes that innovative systems will bring to the telecommunications market are hard to predict. New kinds of data networks, Internet-based alternatives for voice traffic, and important changes in the scope and competitive structure of the satellite industry are just a few examples of current developments. It will become increasingly important to ensure that regulation is technologically neutral, and that competition is not handicapped by disparities in the regulation of different systems that, through convergence, have come to provide the same services. The lesson from the telecommunications industry over the past 5 years is that consumers and the American economy will continue to benefit as competition has the opportunity to take hold in all markets.

FAMILIES AND THE LABOR MARKET, 1969-1999:

ANALYZING THE "TIME CRUNCH"

MAY 1999

**A Report by the
Council of Economic Advisers**

EXECUTIVE SUMMARY

The American family has experienced dramatic changes over the last three decades – changes in the amount of time parents work for pay; changes in income and who earns it; changes in family size; and changes in how child care and household tasks are accomplished. This report assesses some of these changes and the challenges they create. The report seeks to further our national discussion concerning balancing work and family and to encourage a discussion of policies that could help strengthen American families. The major conclusions of the report include:

- **Increase in Hours Worked.** The hours American parents work in paid jobs have increased enormously since 1969 due to a dramatic shift of mothers' time from the household to the labor market. In 1969, 38 percent of married mothers worked for pay; in 1996, 68 percent did so. Both married mothers and single parents are working more for pay today than 30 years ago.
- **Reductions in Time Available for Children.** Although the evidence on time use within families is limited and needs further study, the increase in work from 1969 to 1996 has produced a reduction in the time available for parents to spend with children. The increase in hours mothers spend in paid work, combined with the shift toward single-parent families, resulted in families on average experiencing a decrease of 22 hours a week (14 percent) in parental time available outside of paid work that they could spend with their children.
- **Burdens on Women.** Virtually all of the increase in total hours families spend on paid work has come from increases in women's hours. While annual hours of paid work by all wives increased greatly – by 576 hours, or 93 percent – husbands' hours of paid work decreased slightly from 1969 to 1996. The "time crunch" falls heavily on employed women who spend over one third less time on child care and household tasks than women without paid jobs, but still have 25 to 30 percent less free time.
- **Changes in Family Income.** The average American family is better off economically today than in 1969. Not everyone has gained by working harder, however. Since 1969, the top quarter of families gained, while the lower quarter lost and the middle has remained nearly constant in per capita income, adjusted for inflation. The situation of lower-income families has been improving, however, in the strong economic expansion of the 1990s.
- **Rise of the Single Parent.** At the same time, the share of families with a single parent has expanded greatly since 1969. Single parents have half as much total time as two parents have and typically have less than half as much potential income. The rising number of single parents has increased the proportion of families that are "cash-strapped" and "time-poor."
- **Need for Policies to Help Families.** Increased time in market work among parents raises a key set of challenges to policy-makers seeking to help promote strong families, including the need for flexibility in paid work hours, the need for available and affordable child care, the need for effective ways to support the earnings of families with low-wage earning parents, and the need to encourage two-parent families to form and stay together.

I. INTRODUCTION

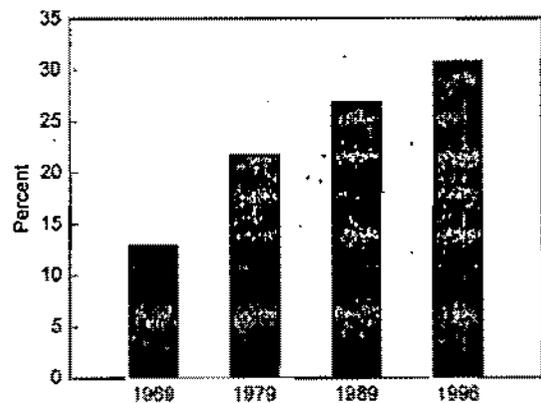
Dramatic changes have occurred over the last thirty years in how families combine work and family life. Clearly one of the most significant changes in the last three decades is the increasing amount of time women have devoted to market work – work that is performed for wages. Combined with hourly earnings increases among women, this means women's earnings have gone up substantially, while their time available in the home has declined. In contrast, men's average hours of paid work and earnings have remained relatively stable. As a result, families have higher incomes, but they have less time for other activities. In short, American families have been in the midst of change – change in time worked for pay; change in income and by whom it is earned; change in family size; and change in how child care and household tasks are accomplished. This report assesses these changes since 1969 for families with children under age 18.

Two other important trends in family life are also likely to affect the well-being of families with children, occurring along with changes in their income and time allocations. First, the share of families with children that are headed by a single parent has increased significantly (see figure 1). Since single parents typically have both lower incomes *and* less total adult time available for work in the home than married-couple families, this trend tends to increase the proportion of families who are "cash-strapped" and "time poor." Second, families have decreased in size as the average number of children in families with children has declined (see figure 2).

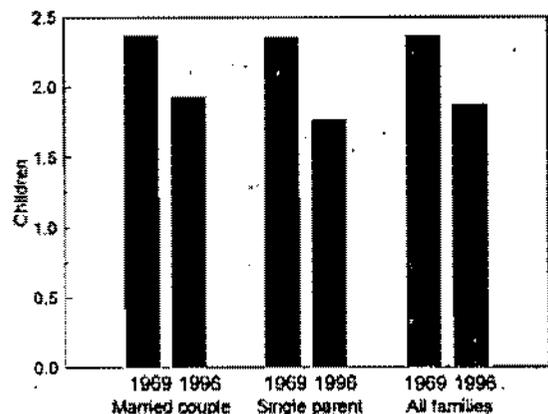
This paper will examine how families with children are faring in the face of all these changes. Key questions to be addressed include:

- How much have hours of market work increased for families?
- How have the extra hours worked by families affected family incomes? How have these trends differentially affected families that differ in skill level, minority status, and number of parents in the household?
- How have these changes in market work and income affected how families use their time in the home? In particular, how have these changes affected parental time available for children?

1. Single Parent Families as Share of All Families



2. Average Number of Children per Family



Some have argued that Americans are facing more and more of a "time bind" as they work longer and longer hours in order to attain an increasing standard of living.¹ Others have argued that, even with increases in hours of paid work, families are not realizing significant income gains, or that families are working harder and harder "just to stay in the same place."² No such "one size fits all" characterization adequately captures the variety of experience in different segments of the population. Different types of families have experienced different changes in paid work time and income.

II. ECONOMIC OVERVIEW

In general, we find that parents today are spending more time in paid work and have increased resources available to them. For most groups, family income has increased and family size is smaller. The average American child -- particularly if he or she is living in a family headed by a married couple -- is better off economically today than in 1969.

There are some groups for whom the economic picture is not as rosy. The continuing increase in the share of children living in single-parent families has substantially diminished the economic progress that families with children would otherwise have made, limiting both their income and their time. Less-educated parents, who have not experienced the wage gains of other parents, are working more hours without a commensurate increase in income. It is encouraging to note, however, that most of these families have experienced income gains in recent years during the strong economic expansion of the 1990s, making it somewhat easier for them to combine work and family life effectively.

Underlying and reinforcing the trends toward more paid work time and smaller families has been the long-term growth of women's wages. Rising wages pull women into the labor market by making it more expensive for them to stay at home, in terms of foregone income. Higher wage levels for women in the labor market, combined with changes in social attitudes toward market work among women, have dramatically changed participation rates among women in the labor force since 1969. There is little indication that this pattern will be substantially reversed in the near future.

¹ Hochschild (1997); Schor (1991).

² Bluestone and Rose (1997).

III. TRENDS IN HOURS OF MARKET WORK

The most dramatic change in the time allocation of families has been in time spent at work for pay. Since 1969, both married-couple and single-parent families have substantially increased their annual hours of paid work. These increases have come almost entirely from the women in these families, who are working more outside the home – more weeks in the year and more hours in the week – than they did thirty years ago. However, while the increase in paid work time has been widespread, the size of the increase has varied considerably across families, depending on the number of parents, their education, whether they have a preschool-age child, and their race or ethnicity.

The estimates of annual hours of work presented in this section are based on the March Current Population Survey (CPS), a large representative survey of about 50,000 households each year.³ While the CPS is the only large-scale representative sample which consistently measures hours of work and family incomes on an annual basis and is therefore the standard data set used for labor market analyses, some have argued that the CPS may be inaccurate because individuals may not be able to recall accurately their usual hours of work during the last year.⁴ In section V of this report we discuss alternative estimates of paid work time based upon “time diaries,” which require individuals to maintain detailed accounts of how they spent their time during a day.

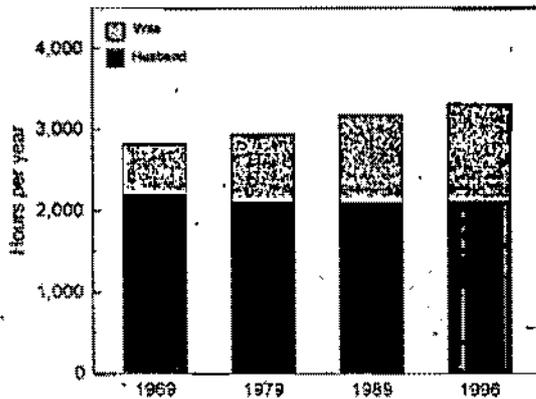
For this analysis, we use the same definition of a “family” as the Census Bureau: all related individuals living together in the same household. We restrict the analysis to families whose head is at least eighteen years old and where there is a child under age 18. A mother (or couple) and her (their) children living in a household headed by another family member are part of the head’s family, and an unmarried parent co-habiting with a domestic partner is classified as a single parent. Throughout this paper, unless otherwise specified, the terms “husbands,” “wives,” and “married women” refer only to those with children.

As shown in figures 3 and 4, annual hours of paid work have increased substantially for both married-couple and single-parent families. (All families with children under 18 are included in figures 3 through 6, including parents with zero hours of paid work.) A person who works forty hours a week for 50 weeks a year (a traditional “full-time” job) will work 2,000 hours in a year. For two-parent families (figure 3) annual hours of paid work increased by 497 hours (18 percent) from 1969 to 1996; for single-parent households (figure 4) they increased by 297 hours (28 percent).

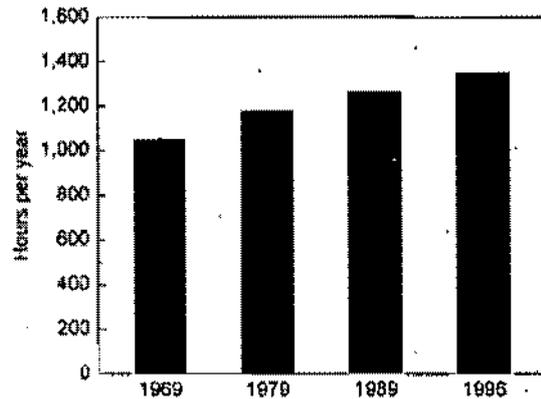
³ We are using the March 1970, 1980, 1990, and 1997 CPS data sets. The data collected each March refer to the previous calendar year. Thus we refer to data for 1969, 1979, 1989, and 1996. We chose those years because they represent peak years (or upswing, in 1996) in the business cycle and thus permit valid historical comparisons. For 1979, 1989, and 1996, information on annual hours of work was derived from two questions which ask how many weeks each individual worked in the previous year and how many hours they “usually worked” in the weeks they worked. Multiplying weeks worked by usual hours worked per week provides a measure of annual hours of work. The 1969 data are not strictly comparable to later years due to differences in data reporting. We have developed an imputation procedure to make these data more comparable to information in later years.

⁴ Juster and Stafford (1991); Robinson and Godbey (1997), chapter 4.

3. Annual Hours of Work, Married-Couple Families



4. Annual Hours of Work by Single Parents



Virtually all of the increase in families' hours of market work has come from increases in women's hours. Conceptually, the increase in women's hours can be divided into three components: more women are employed, employed women are working more hours per week, and employed women are working more weeks per year.

The most dramatic change has been in the percentage of women employed. In 1969, 38 percent of married women with children worked for pay, while in 1996, 68 percent did so – a 79 percent increase in employment. The increase in employment for single mothers has been less dramatic: 53 percent worked for pay in 1969 and 66 percent in 1996.

Average annual hours worked by those who worked for pay also increased over time, showing that not all of the increase in hours came simply from more women entering the labor force. This increase was much greater for wives (who experienced a 24 percent increase) than for single parents (who experienced an 8 percent increase). This is not surprising since on average, single parents in 1969 worked more hours per year for pay than wives did in 1996. Both hours worked per week and weeks worked per year increased for wives and single parents, among those who worked for pay. Each of these components of annual hours, like the total, increased more for wives than for single parents. Increases in weeks worked per year were more dramatic than increases in hours worked per week.

While annual hours of paid work by all wives increased greatly – by 576 hours, or 93 percent – husbands' hours of paid work decreased slightly from 1969 to 1996. This is the result of husbands working both slightly fewer weeks per year and hours per week. These trends are consistent with estimates reported elsewhere in the literature, based on a variety of data sources.⁵

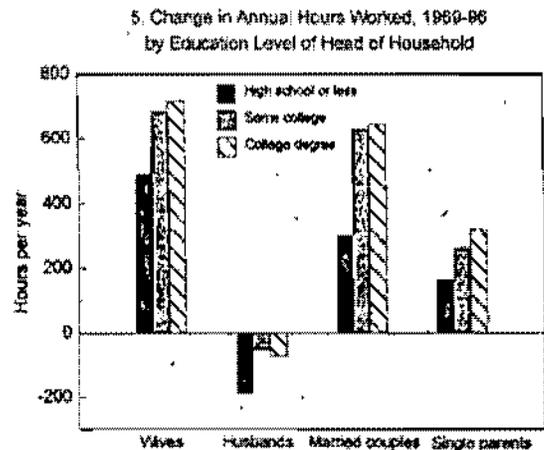
The increase in families' hours of paid work has been widespread throughout the population. All types of families – whether defined by the head's education level, spouse's education level,

⁵ Ellwood (1998), Rones, Ilg and Gardner (1997) and Leete and Schor (1994) used CPS data, Bluestone and Rose (1997) used data from the Panel Study of Income Dynamics, and McGrattan and Rogerson (1998) used decennial Census data. All of these studies show increases in hours of work for women and decreasing or stable hours of work for men when nonemployment is taken into account.

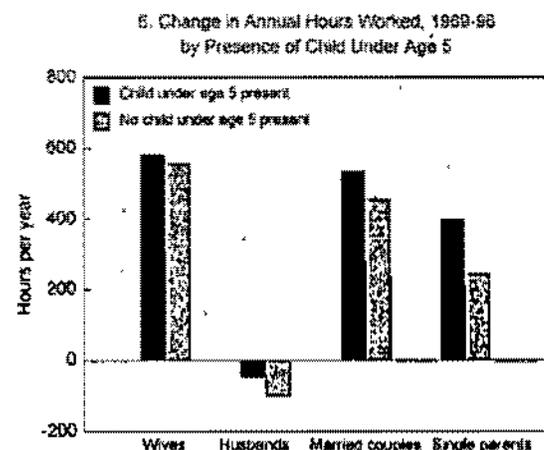
presence of young children, or race or ethnicity of the household head – have experienced substantial increases in hours of paid work from 1969 to 1996. In virtually every case, the increase in family hours of paid work reflects increases by wives and by single parents, rather than by husbands.

While the basic trends have been similar, the magnitude of the increase in hours of paid work has differed substantially across different demographic groups. In part, this is because some groups, such as women with preschool-age children, had lower hours to start with and therefore more room for expansion than others.

- Families whose head had gone to college have increased their hours of paid work much more than those whose head had less education (see figure 5). For married couples with a college-educated husband, annual hours of paid work increased by 644 hours (23 percent) – more than twice the increase for couples in which the husband had a high school diploma or less. The difference was due to the wives’ hours increasing more and the husbands’ hours decreasing less in the college-educated families. For single parents with a college degree, hours of paid work increased by 320 hours (20 percent), compared to 165 hours (16 percent) for single parents with a high school diploma or less.*



- Families with a young child increased their hours of paid work more than those with only school-age children (see figure 6). For single parents with a child under age five, hours of paid work increased by 400 hours (50 percent), compared to 246 hours (21 percent) for single parents without a young child. For married couples, hours of paid work increased by 537 hours (20 percent) for families with a child under age five, compared to 457 hours (15 percent) for families without a young child.*



Why have parents changed their hours of paid work? Trends in wages and trends in paid work hours influence each other. Rising wages tend to draw more individuals into the labor force, while falling wages tend to reduce participation. In turn, more work experience leads to faster wage growth, and vice versa. As a result, wages and paid work time tend to move up or down together.

Trends in hours of paid work for both men and women have roughly paralleled the trends in their wages since 1969 (discussed in section IV-A below).⁶ However, the magnitudes of the changes in paid work time are still not completely understood, and are not easily explained by changes in key economic variables.⁷ The increases in paid work among women seem to be more closely related to increases in their own wages than to the changes in their husband's wages over this period.⁸ Increased work among women may be affected by such hard-to-measure factors as changes in assumptions about women's role in the family, diminished discrimination against women in the workplace, or falling barriers to women entering non-traditional occupations. Highly educated women have benefited more from diminished discrimination than have women with less education, as higher-level professional and management jobs have opened up to them. Whatever the reason, large increases in market work hours among women have substantially changed the time allocation and income of families.

IV. TRENDS IN FAMILY INCOME

The upward trend in hours of market work raises questions about trends in family well-being. A family's economic well-being is typically measured by its income. Earnings are the largest part of family income, which also includes transfer payments such as welfare and unemployment insurance, interest, dividends, and other unearned income such as child support. Earnings come from wages and/or salary, plus any overtime, tips, or commissions. Rising work hours should lead to rising incomes, but the magnitude of this effect depends on changes in wages and other income sources that might be occurring at the same time.

A. Wages

During the same period in which women's hours of paid work have increased, inflation-adjusted wages have been increasing for women on average. Female college graduates' wages have risen more than wages among the less educated. In fact, female high school dropouts' wages have stagnated or even declined slightly. Men's wages have grown very little on average. They have fallen for men without college degrees and remained virtually constant for men with at least a BA.⁹ Because fringe benefits have grown since 1969, workers' hourly compensation (including the value of fringe benefits) has improved more than their wages alone.

⁶ Blank (1997), chapter 3; Juhn and Murphy (1997).

⁷ Blau (1998); Danziger and Reed (1997).

⁸ Juhn and Murphy (1997).

⁹ Blau (1998). These are the trends in mean weekly earnings of full-time workers aged 25-64. Other wage measures such as average hourly earnings or median weekly earnings show slightly different trends, but all show a similar relationship between education levels.

As we discussed above, these wage changes are positively related to changes in hours of work. More educated women have shown the largest increase in their market work, and their earnings have gone up even faster as wages and hours of work rose together. Less educated men have experienced both declining wages and declining hours of work, leading to earnings reductions.

B. Total Family Income

Putting the trends in wages and hours together, to what extent have increases in hours of paid work within families translated into increases in family income? To answer this question, we present estimates of average family incomes, by income component, to provide one assessment of how the changes in hours have affected the standard of living of families in the United States.¹⁰ Our income measure is based upon before-tax cash income only, including cash benefits such as welfare and unemployment insurance benefits, and does not include other family resources, such as fringe benefits, food stamps, and the Earned Income Tax Credit (EITC). While these other resources and taxes are important, they are difficult to measure accurately or consistently for individual families. Because food stamp use grew rapidly in the 1970s and the EITC expanded greatly in the 1990s, the income measure we use omits more of the resources available to low-income families today than in the 1960s. Our estimates therefore understate the gains made by low-income families since 1969.¹¹

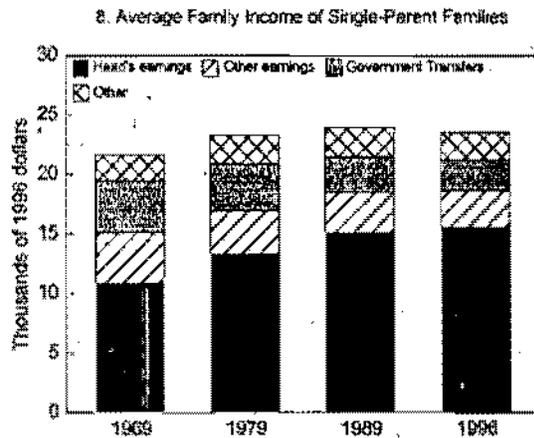
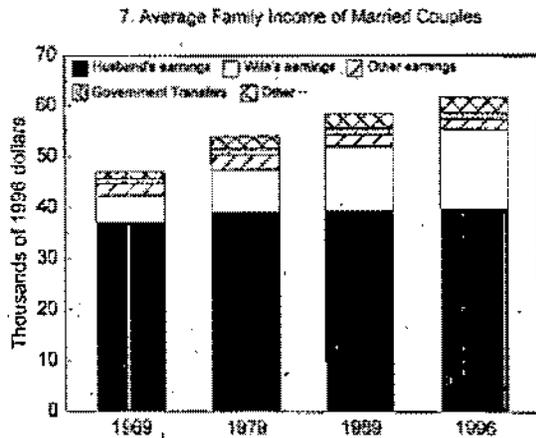
1. Trends in Income by Family Structure

Trends in income and in the various components of income (earnings, government transfers, other sources of income) have varied across different types of families.¹² Both married-couple families and single-parent families achieved increases in inflation-adjusted income from 1969 to 1996 (see figures 7 and 8). However, even though single parents had substantially higher rates of growth in paid work hours, married-couple families experienced a much larger average increase in income.

¹⁰ To adjust for changes in prices over time, these estimates use the CPI-U-X1 price index measure. The CPI-U-X1, an alternative to the CPI-U (Consumer Price Index for Urban Consumers), uses the rental equivalence approach to improve the treatment of home ownership costs.

¹¹ For estimates of changes in family incomes using a broader definition of income, see Levy (1996).

¹² Throughout the following analysis we use mean (that is, average) income, rather than the median or another indicator of the distribution. Changes in mean income can be decomposed into changes in means of the components of income, whereas changes in the median cannot. There has been a more positive change in mean income than in median income, as disproportionate growth in the upper tail of the income distribution pulls up the mean without affecting the median. We multiplied topcoded values by 1.45 before taking the means of the distributions so that the means would not be underestimated.



- *The incomes of married-couple families increased by more than their increase in paid work time. Their average family income increased by almost a third from 1969 to 1996 (\$14,800 in 1996 dollars), while their annual hours of paid work increased by less than a fifth.*
- *For single-parent families, incomes increased by much less than paid work time. They also increased much less than the incomes of married-couple families over this period, after adjusting for inflation. Average income of single-parent families increased by less than ten percent (\$1,920 in 1996 dollars) from 1969 to 1996, while their paid work hours increased by more than a quarter.*

Increases in the earnings of wives and single parents generated most of the income growth from 1969 to 1996. Single parents' earnings increased more than their total family incomes did, as earnings increases were offset by a forty percent decline in average government cash transfer payments. For two-parent families, increases in the wives' earnings represented two thirds of the increase in family income, with the remainder attributable to an increase in the husbands' earnings and an increase in unearned income from sources other than government transfer payments.

Among both wives and single parents, increased earnings reflect an increase in hours of work and an increase in hourly earnings rates. Rising earnings among wives reflected a startling 93 percent increase in their hours and a 52 percent increase in their earnings per hour. For single parents, hours of work increased by 28 percent, while hourly earnings increased by 17 percent.

2. Trends in Income by Other Demographic Characteristics

As with hours of paid work, trends in average family incomes differ substantially across groups of families classified by education, race or ethnicity, or presence of young children. Income growth has been greater for families whose head is highly skilled, for families headed by a non-Hispanic person, and for families with preschool-age children.

- *More highly educated families had greater income growth from 1969 to 1996.* Married couples' income grew by almost a third if the husband had a college education, but less than ten percent if the husband had a high school diploma or less. For single parents, inflation-adjusted incomes grew by eight percent if they had a college degree, but incomes fell by four percent for single parents with a high school diploma or less. Much of this difference in income growth reflects larger hours increases for highly skilled wives and single parents, and earnings declines for low skilled husbands. Erosion of the purchasing power of cash welfare benefits also helps explain why the inflation-adjusted incomes of less-educated single parents fell.
- *Average income growth for whites and blacks was substantially higher than for Hispanics.* Among families headed by a white person, average incomes grew for both married couples (18 percent) and single parents (2 percent) from 1979 to 1996.¹³ For blacks, average incomes grew by 18 percent for two-parent families and by 6 percent for single-parent families. Finally, for Hispanics, average incomes fell for both married couples (4 percent) and single parents (3 percent). The results for single parents are striking, given the relatively large increases in hours worked for pay by Hispanic single parents over this period. The results for married couples are less surprising, given that Hispanic couples increased their hours of paid work only about half as much as white or black married couples. An increasing share of recent immigrants with lower education and wage levels in the Hispanic population also helps explain why Hispanics' incomes fell. In addition, wages and cash welfare benefits declined.
- *Families with a child under age five had greater average income growth than families with older children.* For married couples, average incomes increased by 38 percent for families with a child under age five, compared to 27 percent for families with only older children. For single parent families, mean incomes increased by 17 percent for those with young children, but by just 6 percent for families with only older children.¹⁴

3. Recent Trends in Family Income

Trends in family income from 1992 to 1996 are considerably more favorable than the longer term trend since 1969. Even families headed by single parents with a high school diploma or less, whose real income deteriorated from 1969 through 1992, made income gains from 1992 to 1996 during the sustained period of economic expansion under the Clinton Administration.

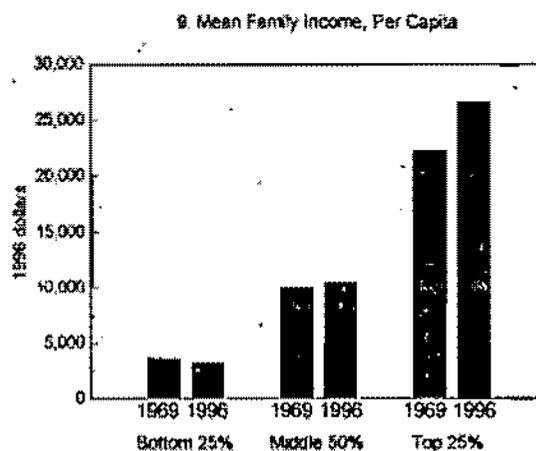
¹³ Our race and ethnicity comparisons begin in 1979 because the CPS did not identify Hispanics in 1969.

¹⁴ Of course, having a younger child often implies being a younger parent. We do not control for the age of the parent in this analysis.

C. The Distribution of Family Per Capita Income

To assess the implications of income growth for families with children, we need to take account of the increasing share of single-parent families, whose incomes are lower and grew much less than the incomes of married-couple families (see section IV-B-1 above). We also need to consider the decrease in family size, because a given family income provides more resources per child when there are fewer children in the family. Moreover, because less-skilled, lower-income parents have had slower income growth than highly skilled, higher-income parents, it is important to consider the trends in income for lower-income and higher-income families, not just the average family.

Figure 9 presents estimates which incorporate the combined effects of the increasing share of single-parent families and decreasing average family size, to assess changes in incomes for families with children. To reflect changes in the share of single-parent families, the diagram shows changes for the *combined* family income distribution of single-parent and two-parent families. In addition, as a crude way of adjusting for the differences in family size between two-parent and one-parent families and for the decreases in family size over time, family incomes are presented in per capita terms. (This is a crude measure because it does not cost twice as much to support two people as one. On the other hand, two do cost more to support than one. The true measure of equivalent income for different family sizes lies somewhere between per capita and total income.) The figure shows the change in average income per person for the lowest quarter, the highest quarter, and the middle half of the distribution of all families' per capita incomes.



These estimates indicate that while there has been substantial growth in income per person for families with high per capita income, income per person has been either stable or decreasing for other families when 1996 is compared with 1969. During the economic expansion from 1992 to 1996, however, families with lower per capita incomes also experienced rising income per person.

- *Since 1969, the top quarter of families gained, while the lower quarter lost and the middle half remained nearly constant in per capita income terms, after adjusting for inflation. The top quarter gained 20 percent (\$4,420 in 1996 dollars) from 1969 to 1996, while families in the lower quarter of the per capita income distribution had declines of 11 percent (\$410). For families in the middle half of the per capita income distribution, average income per person has remained relatively constant, with income gains of 4 percent (\$452).*

Since family size has been decreasing, it follows logically that increases in mean income are less dramatic, and decreases are more dramatic, when calculated on a family basis rather than on a per capita basis.

V. HOW DO FAMILIES RESPOND? IMPLICATIONS FOR FAMILY TIME USE OUTSIDE THE JOB

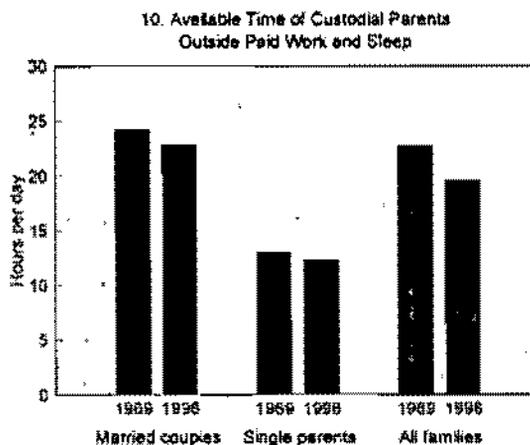
The trends in hours of paid work and family incomes described above have had a major impact on family life. Increasing hours of paid work may mean higher incomes, which provide more resources for parents and children. But increasing paid work time also means less time for other activities. The evidence on time allocation to non-market activities is much more limited than the data on hours of paid work and income, and conclusions must therefore be more tentative.

The CPS, with its larger sample size, only allows us to examine hours spent in paid work (and therefore hours available for other activities) along with changes in family size and structure. We have limited data on what people actually do with the time they do not spend in paid work, mainly from time-use diary studies. These studies have complete data only for a small sample of people. We begin with the CPS data regarding basic trends and then discuss the more detailed time-use diary data.

A. Trends in Current Population Survey Data

What can the CPS tell us about how the changes of the past several decades have affected the number of home hours that families have available for caring for children and maintaining a household? The data indicate that families have less total time to devote to unpaid activities, including time with children, because they are spending more time in the labor market and because the share of families with a single parent is growing.

Figure 10 shows the trends in non-market time that custodial parents potentially had available to spend with all their children, after subtracting time spent at paid work and allowing eight hours per day for sleep. We emphasize the fact that this is only time potentially available in the home; there is no information in the CPS about how parents actually spend their time outside paid work. Figure 10 shows that from 1969 to 1996, both married-couple and single-parent families experienced a decrease in time not spent on paid work. The overall decrease is greater than the decreases within either family type because the proportion of single-parent families increased over this period.



It can also be noted that changes in family size would affect the parental time potentially available per child. Statistics indicate that despite increases in paid work hours for each type of family, the amount of non-market time potentially available *per child* has increased for both married-couple and single-parent families since 1969. This measure is obviously misleading because it

assumes that a single child who spends time with a parent gets twice as much parental attention as each of two children who spend that same time with a parent. In any event, the increasing number of single-parent families has meant that overall, the average amount of family time potentially available per child has remained relatively constant when single-parent and married-couple families are considered as a whole.

B. Time Use in the Home Estimated from Time-use Diaries

Fortunately, we have a supplementary source of data: time-use diary surveys, which ask respondents to keep a detailed diary recording how they spend their time during a specific day. These surveys provide an alternative, more accurate method of measuring paid work time, as well as time spent in various kinds of unpaid activities, such as commuting, housework, child care, shopping, recreation, and personal care. The trends in hours of paid work time and non-market time described above are based on data which report individuals' estimates of their usual hours worked per week in the previous year. Such estimates may not accurately portray the actual hours worked for pay because the question is somewhat ambiguous and respondents may not be able to report accurately on a "usual" week in the few minutes allowed during the CPS interview. Time-use diary measures tend to show shorter paid work hours and sometimes even different trends than the CPS.¹⁵

Unfortunately, such time-use diary surveys are conducted much less frequently and with much smaller samples than the CPS. The latest available data were collected in 1985; results of a survey done in 1992-94 are not yet publicly available. Because of the small samples, time-use diary surveys cannot be used to examine trends for smaller subgroups of the population, such as single parents or blacks. Moreover, the individuals who complete the diaries may not represent the U.S. population as well as the CPS sample does. These surveys do, however, provide information about how much time is spent in different types of unpaid work at home, such as child care and housework, in leisure pursuits, and sleep.

1. Averages

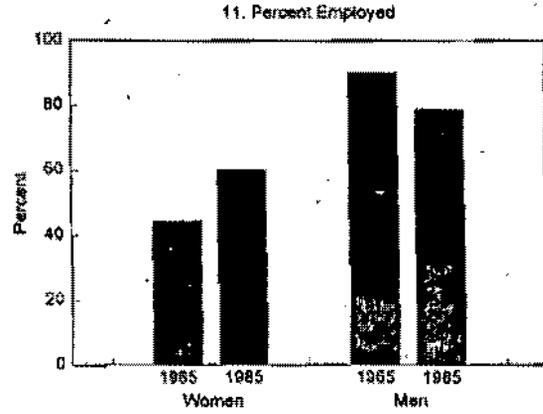
Time-use diaries indicate that the entry of many mothers into the workforce has placed them into what can be termed a "time crunch." While both employed and nonemployed women have managed to keep the amount of time spent with children relatively constant, many more women with children have moved from the "nonemployed" to "employed" category. The "time crunch" is best illustrated by the fact that in any single year, employed women spend over one third less time on child care and household tasks than women without paid jobs, but still have 25 to 30 percent less free time.¹⁶

¹⁵ Robinson and Godbey (1997), chapter 5.

¹⁶ Robinson and Godbey (1997), Tables 3 and 6.

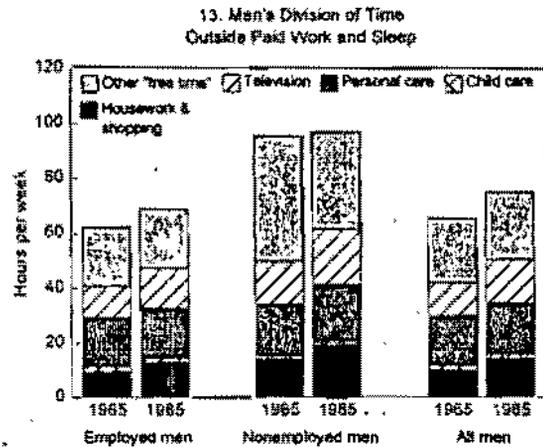
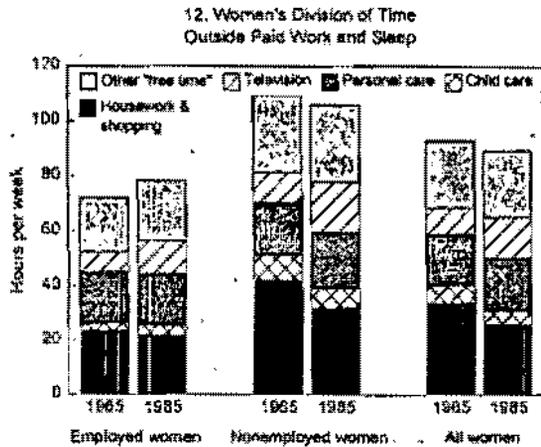
Time-use surveys conducted in the U.S. in 1965 and 1985 show that employed mothers spent virtually the same amount of time taking care of children in 1985 (6.7 hours per week) as in 1965 (6.3 hours per week). Mothers without paid jobs also maintained a consistent amount of time with children, spending 12 hours a week on child care in both years. The child care category in the time diaries includes only time spent on direct caregiving, not time shared with children while engaging in other activities.

When the shift of women into employment (shown in figure 11) is taken into account, mothers' time in child care declined by 10 percent overall, from ten to nine hours per week. Fathers did not make up the difference; their child care time remained about 2.6 hours per week from 1965 to 1985. This suggests that the increase in market work among women has reduced parents' total child care time.



Source: Time-Use Diary Surveys (Robinson & Godbey 1987)

Mothers have reduced their child care time by much less than they have increased their time in paid work because they have cut back on other activities. Women have markedly reduced time they spend on household chores (see figure 12). Men have somewhat increased the time they spend on housework (see figure 13), but it does not make up for all of the reduction by women. Since the "child care" category only captures activities that are directly focused on taking care of the child, any reductions in time parents spend with children while they are primarily engaged in another activity, such as cooking, cleaning, or shopping, are not reflected in the time-use data.



Time spent in commuting to work increased 13 percent (2.5 minutes per trip) between 1983 and 1995, according to a Federal Highway Administration survey.

2. Differences among Families

The effect of women's increased hours in the labor market on families is likely to vary between college-educated parents, whose incomes have been rising because their hours and wages both increased, and less-educated parents, whose incomes may have fallen despite increased work hours because of falling wages. The effect of women's increased hours in the labor market on families is also likely to vary between married couples, who can shift some housework and child care from working wife to husband, and single parents, who cannot. Within married-couple families, moreover, there are likely to be differences across education levels in this shifting of tasks, as child care time by fathers rises with their education. Unfortunately, the time-use diary survey samples are too small to be broken down into these subsamples. Thus, the above-quoted estimates are based on average trends and may miss important distinctions between high- and low-income groups, or between single-parent and two-parent families.

VI. KEY POLICY ISSUES RELATED TO THESE CHANGES IN FAMILY LIFE

The changes in American families and work patterns have created new opportunities, but also present significant policy challenges to private employers and government. In this section we identify four areas of policy that are important in helping families seeking to balance work and family life: increasing the flexibility of market work; supporting income among low-income working families; improving access to high quality and affordable child care; and encouraging the formation and maintenance of two-parent families.

A. Increasing the Flexibility of Paid Work

To an important extent, the effect of parents' market work time on children depends on when and where it is performed. By shifting from work in the home to work in the market, many women find themselves with far less flexibility in responding to family needs. Key employment arrangements that affect hours flexibility for parents include:

- *Flexible work arrangements* (defined as allowing workers to vary the time they begin or end work). These arrangements are an increasingly popular approach to decreasing the tension between work and family. In 1997, 28 percent of full-time wage and salary workers had flexible work schedules. This was up sharply from 15 percent in 1991, the most recent prior year when data were collected.¹⁷

Maintaining high productivity need not be inconsistent with allowing flexibility in work arrangements, as many private sector employers have discovered. The Federal government has led by example, instituting "flextime" which allows employees some discretion in when they work their allotted hours. The President has proposed a flextime initiative that would allow *all* workers to take

¹⁷ Data on alternative work arrangements comes from the 1991 and 1997 May supplements to the CPS.

“time-and-a-half” overtime compensation in the form of compensatory time for family and medical leave purposes or vacation instead of cash.

- *Flexibility in shift work.* This approach enables parents to share child care more easily by working different shifts. In order for shift work to make combining paid work and child care easier, however, the choice of shifts must be voluntary. For those workers who cannot determine their own schedules, the combination of shift work and work in the home is a potential source of stress and expense. Non-standard working hours may make it difficult both to find time to spend with children when they are awake and not in school and to arrange for child care while working. In 1997, 83 percent of full-time wage and salary workers were on regular daytime schedules, 4.6 percent were on evening shifts, 3.9 percent were on employer-arranged irregular schedules, 3.5 percent were on night shifts, and 2.9 percent were on rotating shifts.

This Administration has also played a major role in increasing flexibility among families by helping enact the Family and Medical Leave Act (FMLA), which enables workers to take up to 12 weeks unpaid leave to care for a new baby or ailing family member without jeopardizing their jobs. Since its inception in 1993, millions of workers have taken advantage of the FMLA to spend necessary time with their families. The President has also proposed expanding the FMLA to cover more workers and to allow FMLA-covered workers up to 24 hours per year for parent-teacher conferences or to accompany a child, spouse, or elderly parent for routine medical and dental care.

- *Working at home for pay.* This arrangement can increase parents’ flexibility. In 1997, 3.3 percent of all wage and salary workers were doing work at home for pay, up from 1.9 percent in 1991. An additional ten percent of all wage and salary workers in 1997 were doing work at home without receiving extra pay for it. Nearly 9 out of 10 workers who were paid for work at home were in white-collar occupations.

B. Giving All Parents, Especially Low-Income Parents, More Choices

While incomes have been rising for most people, families at the bottom of the income distribution, particularly the less educated and single parents whose inflation-adjusted incomes were lower in 1996 than in 1969, still face serious economic hardship. Many low-income parents are forced to work harder and spend less time with their families just to make ends meet. Recent policy changes that have helped these families cope include:

- Expansions in the Earned Income Tax Credit (EITC), to ensure that persons who work hard on their jobs can take home enough money to support their families;
- Providing a \$500-per-child tax credit to help offset the expense of raising children;
- Increases in the minimum wage from \$4.25 in 1993 to \$5.15 in 1997;

- Expanded child support enforcement provisions, which help ease the economic burden on single mothers and enforce responsibility for economic support of children on both parents;
- Major welfare reform legislation that has helped single mothers move from welfare to work;
- Employer tax credits to help create jobs for welfare recipients;
- Substantial expansions in support for vocational education, community college, and skill development among persons in lower-income families, including the creation of Hope Scholarships, increases in the maximum Pell Grant, and the passage of the Workforce Investment Act of 1998.

These steps, and the strong economy and steady economic growth of the last six years, have combined to create jobs, reduce unemployment, and raise wages for all workers – especially the less skilled who are most affected when jobs are scarce.

C. Improving Access to High Quality, Affordable Child Care

Most parents adjust to an increase in their paid work time by increasing their use of child care providers. The availability, cost, and quality of child care are crucial to the well-being of our children and the ability of parents adequately to balance the needs of work and family.

The primary child care arrangements for preschool-age children of employed mothers in the fall of 1994 were divided roughly equally among care in the child's home (by a relative or nonrelative), care in another home (by a relative or nonrelative), and care in an organized child care facility. Since comparable data were first collected in 1986, the trend shows a slight increase in the proportion of children receiving care in their own homes, relatively fewer children receiving care in another home, and relatively more children receiving care in an organized facility. In addition, the share of monthly income spent on child care by those purchasing this service rose from 6.3 percent to 7.3 percent between 1986 and 1993.¹⁶

The Clinton Administration has consistently emphasized the importance of child care availability and quality. Since 1993, child care subsidies for low-income families have grown by 80 percent. In addition, the Administration's budget proposal for the fiscal year 2000 includes a variety of proposals to help make child care more affordable and improve its quality, including an investment of \$7.5 billion over five years in the Child Care and Development Block Grant; combined with the funds provided in welfare reform, this new investment would enable the program to serve over one million additional children by fiscal 2004. Also, the President's budget includes \$5.1 billion over five years to increase the Child and Dependent Care Tax Credit for three million

¹⁶ The earliest comprehensive data on families' child care arrangements were collected by the Bureau of the Census in 1977. The earliest data that are compatible with the most recent data are from fall 1986. We use the 1986 data for consistency.

families earning under \$60,000 a year, and \$3 billion over five years in a proposed Early Learning Fund to improve the quality of care children receive.

In addition, the Administration is addressing the need for after-school care for children. Since 1970 the percentage of married couples who work full time, year round and have school-age children has nearly doubled (from 18.7 percent in 1970 to 37.3 percent in 1997). Today, the parents of over 28 million school-age children work outside the home. This has led to a strong demand for quality programs to ensure that children are safe and learning in the hours in which they are not supervised by a parent. In fact, experts estimate that every day roughly 5 to 7 million children are left unattended at home. The Clinton Administration has responded to this demand by increasing its investment in after-school programs from \$40 million to \$200 million in the 1999 fiscal year, which is estimated to reach roughly 400,000 children this year. And the President's fiscal year 2000 budget would triple the investment in these programs to \$600 million.

Together, these initiatives help parents ensure that their children are receiving quality care while they work.

D. Encouraging Two-Parent Families

When two-parent families form and stay together in a supportive relationship, many of the economic and emotional stresses of balancing work and family are eased. Two-parent families have greater earning potential and more potential time to spend with their children than single-parent families. Among the recent policies which have helped maintain married-couple families, the eligibility rules for Medicaid and other programs have been changed so as not to penalize two-parent families for staying together.

VII. CONCLUSION

This study indicates that there has been a large-scale shift of time spent by women from the home to the labor market over the last generation. For most families, this change has led to an increase in family income. The study also indicates that there has been a very large shift from married-couple to single-parent families over the last 30 years, reducing both income and parental time available for many children. While smaller family sizes have helped offset the increase in market work, many parents find it difficult to balance jobs and children.

This report demonstrates that single parents face the most difficulties. They have only half as much total time available as two parents, and single mothers typically have less than half as much earning power as a married couple because women's wages are lower than men's. Lack of income limits most single parents' ability to purchase time-saving goods and services and high quality child care. Thus, they face a severe "time crunch" as well as a "money bind."

Men without college educations have faced declining wages. While increased work by their wives has helped maintain their families' standard of living, it is still difficult for these families to afford child care. Moreover, less-educated workers are less likely to have jobs that permit parents to arrange their hours to accommodate family needs.

More educated parents, whose increased time in the labor market has been rewarded with considerably higher incomes than in 1969, can more easily afford high quality child care, household help, and other time-saving goods and services. Married-couple families, particularly those where the husband has a college degree, have seen substantial improvements in their economic situation over the last three decades. Even these couples, however, face the stress involved in balancing increased work and family.

While it is beyond the scope of this study to speculate about the causes of changing work and family patterns, what is clear is the magnitude of the change and the importance of the challenge. There is no more vital task for our society than raising our children well. Parents in all different income brackets and settings face every day the extraordinary task of dividing their time to maximize familial, economic and personal well-being.

It is the responsibility of employers and public policy-makers to continue the search for methods to help productive workers function as effective parents and responsible family members. If children, families, and our communities are going to withstand the stresses of the trends of the last 30 years, employers and public policy makers have a responsibility to do everything they can to help parents balance work and family. Workplaces and work hours must become more flexible, parents need more supports and more choices, and more children need to live with solid families in their lives.

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**THE EFFECTS OF WELFARE POLICY AND THE ECONOMIC EXPANSION ON WELFARE
CASELOADS: AN UPDATE**

August 3, 1999

A Report by the Council of Economic Advisers

This study could not have been completed without the generous assistance of the Department of Health and Human Services in providing data and program information.

THE EFFECTS OF WELFARE POLICY AND THE
ECONOMIC EXPANSION ON WELFARE CASELOADS: AN UPDATE

EXECUTIVE SUMMARY

This study investigates the causes behind recent changes in welfare caseloads, updating a 1997 CEA report of caseload change.

- *The fall in welfare caseloads has been unprecedented, wide-spread, and continuous, and employment of welfare recipients has increased.* 14.1 million people received welfare in January 1993, and this number had fallen to 7.3 million by March 1999, according to estimates released today (August 3, 1999). In 31 states the caseload is less than half of what it was when President Clinton took office, and all states have experienced double-digit percentage declines. For 22 states, the percent drop during 1998 was larger than during 1997 (from January to December). Previous analyses by the Department of Health and Human Services show that the percentage of welfare recipients working tripled between 1992 and 1997, and an estimated 1.5 million adults who were on welfare in 1997 were working in 1998.
- *The 1996 legislation has been a key contributor to the recent declines.* PRWORA produced a dramatic change in welfare policy: work and self-sufficiency became a primary goal; state and local governments were given much greater control of their programs; and states experimented with a host of program designs. The evidence suggests that these changes caused a large drop in welfare participation, a drop that is independent of the effects of the strong labor market. The estimates imply that TANF has accounted for roughly one-third of the reduction from 1996 to 1998, the last year of data analyzed in this study. In the earlier years, 1993-1996, most of the decline was due to the strong labor market, while welfare waivers played a smaller yet important role.
- *The strong labor market has made work opportunities relatively more attractive, drawing people off welfare and into jobs.* The unemployment rate has not declined as much in the post-TANF period as it did in the 1993-96 waiver period. As a result, the share of the decline in the caseload that is attributable to improvements in the labor market was much higher in the 1993-96 period (roughly 26 to 36 percent) than in the 1996-98 period (8 to 10 percent).
- *Past increases in the minimum wage have made work more attractive and, as a result, caused welfare participation to decline.* The estimates imply that about 10 percent of the caseload decline was due to increases in state and federal minimum wages.
- *The specific program design adopted by a state can affect its caseload declines.* The study examines the effects of a number of specific policies, including family caps, earnings disregards, time limits, work exemptions, and work sanctions on the size of the caseload.

The large sustained declines in caseloads provide one piece of evidence about the effectiveness of welfare reform efforts. However, there are multiple indicators of the impact of welfare reform, including changes in work and earnings among welfare leavers, in marriage rates and out-of-wedlock pregnancies, and in poverty rates. The Clinton Administration is collecting and tracking information on all of these measures in order to fully assess the impact of welfare reform.

THE EFFECTS OF WELFARE POLICY AND THE ECONOMIC EXPANSION ON WELFARE CASELOADS: AN UPDATE

OBJECTIVE OF STUDY & SUMMARY OF FINDINGS

From the start of the Clinton Administration to March 1999, the number of people receiving welfare declined by 6.8 million. In 31 states the caseload is less than half of what it was when President Clinton took office. Not since 1967 has such a small share of the population received welfare. Not only have the declines been large, they have also been widespread and continuous (Table 1). Between 1993 and 1998 (the last year of data analyzed in this study), all 50 states and the District of Columbia experienced double-digit percent reductions in welfare participation, and in most states the declines were unprecedented. Although a substantial share of the reduction occurred between 1994 and 1996, in many states the largest declines have occurred more recently. In fact, in 22 states the percentage decline during 1998 (from January to December) was greater than it was in 1997.

This study updates and extends a 1997 Council of Economic Advisers (CEA) report examining the relative importance of a variety of economic and policy changes on caseload declines.¹ The earlier study examined changes in welfare participation between 1993 and 1996; the current study updates that report by including data through 1998. It also analyzes the effects of additional factors, such as changes in the minimum wage as well as the welfare reforms enacted in 1996.

This report uses data from 1976 to 1998 and finds that from 1996-98 policy factors were extremely important, which is not surprising given the scope of the 1996 reform. The 33 percent decline in the reciprocity rate between 1996 and 1998 was due in large part to the changes in state welfare programs implemented under the Temporary Assistance for Needy Family (TANF) block grant. Specifically, roughly one-third of the caseload decline between 1996 and 1998 was due to program reforms implemented under TANF, 8-10 percent was due to the improved labor market, about 10 percent was due to the higher minimum wage, and 1-5 percent was due to lower cash welfare benefits.

During 1993-96, roughly 26-36 percent of the caseload decline was due to the improved labor market. The relatively large effect of labor market conditions on the caseload over this period reflects the fact that the decline in unemployment between 1996-98 was much smaller than the decline experienced between 1993-96. Another 12-15 percent of the decline in welfare participation was due to welfare waivers, which were issued to states to allow them to experiment with alternative program designs. The caseload fell 6-22 percent because of lower inflation-adjusted welfare benefits. The real value of the minimum wage fell between 1993 and 1996 (the increase in the minimum wage in 1996 occurred in October, so it was not effective most of the year), which by itself would have caused the caseload to increase by about 10 percent. The remaining change was due to other factors.

¹ Council of Economic Advisers (1997). "Explaining the Decline in Welfare Receipt, 1993-1996: Technical Report," Executive Office of the President of the United States.

Table 1. Changes in the Number of Recipients in Each State

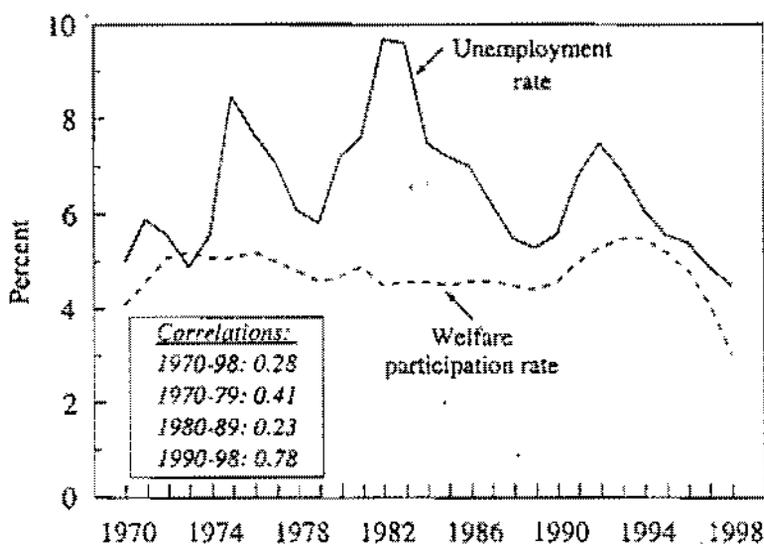
State	Number of recipients		Percentage Change From		
	1993	1998	93 to 96	96 to 98	93 to 98
Alabama	138,465	54,635	-26	-46	-61
Alaska	37,078	29,582	-1	-19	-20
Arizona	199,153	102,511	-16	-39	-49
Arkansas	71,989	32,633	-21	-43	-55
California	2,511,293	1,998,618	3	-23	-20
Colorado	122,890	50,746	-22	-47	-59
Connecticut	162,481	117,777	-2	-26	-28
Delaware	27,736	15,820	-16	-32	-43
DC	69,549	54,856	0	-21	-21
Florida	691,053	261,581	-22	-52	-62
Georgia	398,077	185,052	-15	-45	-54
Hawaii	57,336	46,724	16	-30	-19
Idaho	21,877	3,867	1	-83	-82
Illinois	694,050	476,576	-7	-26	-31
Indiana	215,367	111,176	-35	-21	-48
Iowa	102,438	65,665	-16	-24	-36
Kansas	88,363	34,536	-26	-47	-61
Kentucky	220,766	119,360	-22	-31	-46
Louisiana	259,762	124,800	-12	-46	-52
Maine	66,914	39,423	-18	-28	-41
Maryland	219,998	116,456	-11	-40	-47
Massachusetts	321,219	167,043	-28	-27	-48
Michigan	689,139	332,240	-26	-35	-52
Minnesota	192,173	143,685	-12	-15	-25
Mississippi	168,924	52,523	-26	-58	-69
Missouri	262,382	147,105	-14	-35	-44
Montana	34,875	19,540	-13	-35	-44
Nebraska	47,840	36,665	-20	-4	-23
Nevada	36,009	25,472	-2	-28	-29
New Hampshire	29,797	15,409	-22	-34	-48
New Jersey	345,370	196,947	-19	-30	-43
New Mexico	97,246	74,170	2	-25	-24
New York	1,215,526	886,746	-5	-23	-27
North Carolina	335,620	169,144	-20	-37	-50
North Dakota	18,215	8,541	-28	-35	-53
Ohio	712,277	340,179	-24	-37	-52
Oklahoma	135,762	61,191	-27	-38	-55
Oregon	117,852	46,001	-31	-43	-61
Pennsylvania	610,531	360,009	-14	-32	-41
Rhode Island	62,187	54,150	-8	-6	-13
South Carolina	146,280	60,110	-22	-48	-59
South Dakota	19,913	9,653	-21	-39	-52
Tennessee	310,486	149,089	-20	-40	-52
Texas	784,816	370,857	-16	-44	-53
Utah	52,144	28,258	-25	-28	-46
Vermont	28,301	19,643	-12	-21	-31
Virginia	194,765	99,053	-20	-36	-49
Washington	289,965	202,573	-6	-25	-30
West Virginia	118,113	38,638	-25	-56	-67
Wisconsin	235,247	40,167	-33	-75	-83
Wyoming	17,859	2,471	-32	-80	-86
Total	14,007,468	8,199,666	-13	-33	-41

Data are the average monthly caseloads for the calendar year.

WELFARE PARTICIPATION AND THE LABOR MARKET

Caseloads normally fluctuate with the business cycle, rising in periods of high unemployment and declining when unemployment falls. Chart 1 illustrates this relationship between labor market opportunities and welfare participation over the past three decades. When unemployment increased in the early 1970s, so did welfare participation. The increase in welfare participation in the late 1980s and early 1990s, as well as the decline that began in 1994, also correspond with changes in employment opportunities during these periods. However, the trend in welfare participation does not always match that in unemployment, most notably when other important changes are taking place, including changes in family structure and welfare policies.

Chart 1. Welfare Participation and Unemployment Rates



Economic conditions vary across states as well as over time. Chart 2 displays a scatterplot of the unemployment rate versus the welfare participation rate for each state and the District of Columbia in 1994 when participation was near its peak. This relationship is quite strong, with a simple correlation of 0.65. While this correlation suggests a strong role for economic factors, it is likely to overstate their true role. Characteristics of states that influence their unemployment rates may also influence welfare participation. These characteristics include the age distribution, educational level, metropolitan/rural population shares, and racial and ethnic composition. While these factors may change over time, such change occurs more slowly than changes in policy or economic conditions.

One way to eliminate the effects of these "fixed" factors is to examine changes over time within states, which is the approach employed in this study. Chart 3 displays the simple relationship between the *change* in the unemployment rate and the *change* in the welfare participation rate in each state between 1994 and 1998. It demonstrates that once unchanging state characteristics are removed, the relationship between the unemployment rate and caseloads is not nearly as strong as the simple cross-sectional one, with a correlation of 0.17.

Chart 2. Welfare Participation Rate Versus Unemployment Rate for Each State, 1994

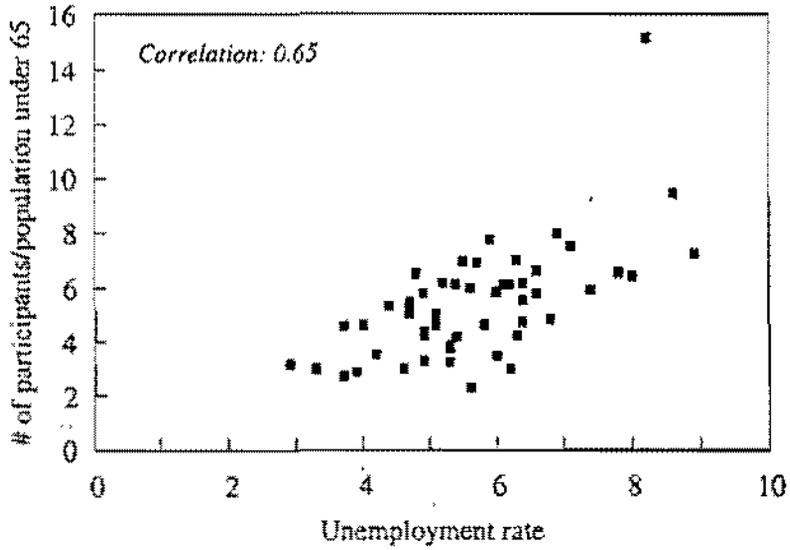
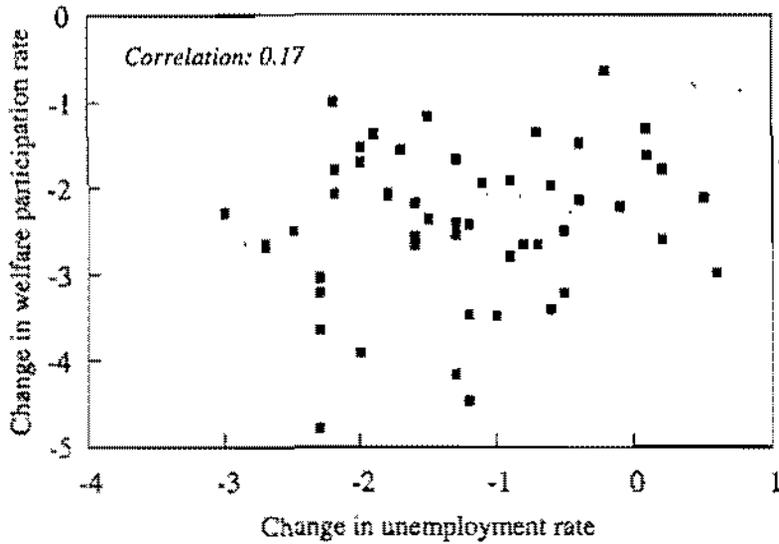


Chart 3. Change in Welfare Participation Rate Versus Change in Unemployment Rate for Each State, 1994-98



The changes over time for the nation as a whole also suggest that factors other than the economy have a substantial effect on welfare participation (Chart 1). For example, increases in welfare participation during the recession of the early 1980s were truncated by eligibility restrictions that were part of President Reagan's welfare reform efforts in 1982. As a result, over the entire 1980s the simple correlation between unemployment and welfare participation was much lower (0.23) than it was in the 1970s (0.41) or the 1990s (0.78).

FEDERAL AND STATE POLICIES

A number of key policy changes have been implemented in recent years and might be expected to have had an impact on welfare participation and caseloads:

Welfare Waivers

Since 1962 the Secretary of Health and Human Services has had the authority to waive federal program requirements in the Aid to Families with Dependent Children (AFDC) program if a state proposed experimental or pilot programs that furthered the goals of AFDC. Although there were a few waivers granted in the early 1980s, it was not until the early to mid-1990s that major, state-wide waivers became widespread. Between 1993 and 1996, the Clinton Administration issued welfare waivers to 43 states, more than any previous Administration. Table 2 lists the date that each state implemented a major state waiver.

These waivers varied substantially across states,¹ and in many cases they differed greatly from the rules under AFDC. Some waivers increased the amount of earnings recipients were allowed to keep and still be eligible for welfare. Other waivers expanded work requirements to a larger number of recipients, established limits on the length of time recipients could remain on aid, permitted states to sanction participants who failed to meet work requirements, or allowed states to eliminate benefit increases to families who conceived and gave birth to children while on welfare (the so-called "family cap"). Given the widespread use of waivers and the degree to which these policies differed from traditional AFDC policy, there is substantial reason to believe that waivers contributed to changes in welfare caseloads.

Like the 1997 CEA study, this report focuses on six "major" types of waivers that received approval to be implemented state-wide²: termination time limits, work requirement time limits, family caps, JOBS exemptions, JOBS sanctions, and the earnings disregard. Each of these policies was discussed in detail in the appendix to the 1997 CEA Technical Report.³

² In a few instances waivers were examined which were not approved to be implemented state-wide but affected a large share of the state's caseload.

³ It was determined that the waiver in West Virginia, which was considered a "major" waiver in the 1997 CEA study, did not in fact meet this requirement (Martini and Wiseman, 1997), which is reflected in Table A1.

Table 2. Dates of Major Welfare Waivers and
TANF Implementation

	Date of First Major Waiver Implementation	TANF Implementation Date
Alabama		11/15/96
Alaska		7/1/97
Arizona	11/1/95	10/1/96
Arkansas	7/1/94	7/1/97
California	12/1/92	1/1/98
Colorado		7/1/97
Connecticut	1/1/96	10/1/96
Delaware	10/1/95	3/10/97
DC		3/1/97
Florida		10/1/96
Georgia	1/1/94	1/1/97
Hawaii	2/1/97	7/1/97
Idaho		7/1/97
Illinois	11/23/93	7/1/97
Indiana	5/1/95	10/1/96
Iowa	10/1/93	1/1/97
Kansas		10/1/96
Kentucky		10/18/96
Louisiana		1/1/97
Maine		11/1/96
Maryland	3/1/96	12/9/96
Massachusetts	11/1/95	9/30/96
Michigan	10/1/92	9/30/96
Minnesota		7/1/97
Mississippi	10/1/95	7/1/97
Missouri	6/1/95	12/1/96
Montana	2/1/96	2/1/97
Nebraska	10/1/95	12/1/96
Nevada		12/3/96
New Hampshire		10/1/96
New Jersey	10/1/92	7/1/97
New Mexico		7/1/97
New York		11/1/97
North Carolina	7/1/96	1/1/97
North Dakota		7/1/97
Ohio	7/1/96	10/1/96
Oklahoma		10/1/96
Oregon	2/1/93	10/1/96
Pennsylvania		3/3/97
Rhode Island		5/1/97
South Carolina		10/12/96
South Dakota	6/1/94	12/1/96
Tennessee	9/1/96	10/1/96
Texas	6/1/96	11/5/96
Utah	1/1/93	10/1/96
Vermont	7/1/94	9/20/96
Virginia	7/1/95	2/1/97
Washington	1/1/96	1/10/97
West Virginia		1/11/97
Wisconsin	1/1/96	9/1/97
Wyoming		1/1/97

Some of the waivers that were approved for state-wide implementation were initially implemented state-wide, some were implemented in selected areas of the state, while still others began in small regions of the state but were eventually phased in state-wide. Information on the pace of implementation is not available for all states. Therefore, the date that is used to signal implementation is the date that the waiver began to be implemented.⁴

The statistical analysis in this report, as in the earlier CEA report, compares states that did and did not have welfare waivers, determining whether those states that implemented waivers experienced larger caseload declines than those that did not. It improves on the earlier report by using the actual date the waivers were implemented in the states rather than the dates they were approved by HHS. In making these comparisons, the current analysis also adjusts for other differences across these states that may account for the differential decline, including economic conditions, cash benefit levels, and the minimum wage.

PRWORA

Enacted in August of 1996, the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) is designed to emphasize self-sufficiency and employment in place of welfare dependency and gives states greater flexibility to design and implement programs to achieve these goals. Benefits are time-limited; adults usually cannot receive Federal aid for more than 5 years during their lifetime, and some States have chosen to set shorter time limits. Most recipients must also participate in a work activity within two years to continue receiving aid.

PRWORA abolished the AFDC program and established the Temporary Assistance for Needy Families (TANF) block grant to help states fund their welfare programs. Under the TANF block grant, Federal assistance consists of an annual fixed transfer to each state equal to the amount of federal transfers the state received in fiscal year 1994, 1995, or the average of 1992-4, whichever was higher. In addition, most of the authority to design welfare programs was passed along to the States, who are required to have half of all recipients working by 2002 (40 percent by 2000). As a result, there are now substantial differences in how welfare programs operate across the nation. Some states increase benefits to welfare families who have additional children, while others do not. Some states stop payment of benefits to the entire family at the first instance of their failure to meet work activity requirements, while other states never sanction more than the adult. Most states allow welfare recipients to keep a substantial portion of their labor market earnings without reducing their welfare payments, while others do not. We investigate both the overall effect of TANF-funded programs on caseloads, as well as the impact of specific policy choices made by the states as part of their waiver or TANF-funded plan.

The effects of the new state programs implemented under the TANF block grant are estimated by examining changes in each state's caseload before and after it implemented TANF, again, after adjusting for other factors such as the unemployment rate and the minimum wage. States were required to submit their TANF plans to the Department of Health and Human Services for approval no later than July 1, 1997. Some states moved quickly after PRWORA was passed to enact TANF-funded programs, building on their welfare reform waivers, while other states operated for a period of time

⁴ Somewhat larger effects are estimated when the date of approval, which was utilized in the 1997 CEA study, is used instead of the date of implementation, as described in appendix A of the technical report.

under the older AFDC program rules.⁵ The date that each state implemented its TANF program is listed in Table 2.

Minimum Wage

A higher minimum wage can make work more attractive, giving welfare recipients a greater incentive to enter the workforce and leave public assistance. On the negative side, if a higher minimum wage reduces employment of low-skilled workers, some people may lose their jobs and enter welfare. At the same time, an increase in the minimum wage may lead employers to substitute away from teenagers (a relatively large share of whom work for the minimum wage) and towards older welfare workers (who are perhaps not as likely to work at the minimum wage, but more likely than teenagers to be working just above the minimum). The latest empirical evidence is mixed, but most studies find either modest or no disemployment effects associated with past increases in the minimum wage.

The minimum wage also varies among states, with 15 states having minimums above the federal floor at some point during the period analyzed in the study (1976-1998). Therefore, the study compares the relationship between welfare participation and minimum wages over time and across states.

AFDC/TANF Benefit Levels

States have long set their own level of maximum monthly benefit payments, with variation by family size and composition. All else equal, higher benefit levels are expected to increase the number of participants. Over the period of this study, the inflation-adjusted level of welfare benefits fell in almost all states. In some cases the state explicitly lowered (or raised) benefits, but in most states benefit levels were fixed and eroded over time with inflation.

DATA AND METHODOLOGY

Using annual calendar year data from 1976 to 1998 on all states and the District of Columbia, the analysis is based on 1,173 observations. A set of models are estimated which correlate movements in welfare participation with movements in state unemployment rates, state AFDC/TANF benefit levels, state/federal minimum wage levels, the implementation of state waivers, and the implementation of state TANF-funded welfare programs.⁶

The estimated models also control for the characteristics of states that are largely unchanged over the entire (1976-98) time period, and for changes in each year that are common to all states. In technical jargon this is known as controlling for state and year fixed effects; this technique is used in most existing studies of annual caseload changes. The estimates are based on a technique known as

⁵ In most cases, the waiver concept becomes meaningless once TANF was implemented because states were given broad control over their welfare policies. In particular, states could operate the broad categories of policies under TANF, whether or not they were continuing a waiver. However, if a state continued a time limit waiver, then participants' time clocks in that state would have been running prior to TANF implementation. As a result, these participants would reach their time limits more quickly than if their clock would have been reset on the date of TANF implementation.

⁶ Most of the data used in the analysis come from well-known sources, with a few exceptions. The information on implementation dates as well as program waivers and TANF were obtained from the Department of Health and Human Services and the Urban Institute (Gallagher et al., 1998).

weighted least squares, which uses the data across states and over time, and weights the data in each state by its overall population. A Technical Report is available which provides more details on the data and the estimation procedures for interested readers. As always in such studies, we estimate a variety of slightly different models to test the robustness of our results to the exact set of variables included.

The results of this methodology are to estimate the effect of changes in the economy or in policies *over time within a state* on the caseload in that state. Hence, the results are the direct result of asking "If variable X changes over time within a state, what will be the effect on caseloads in that state?" This is clearly the question in which we are most interested. It allows us to measure the effects of (say) waiver implementation or unemployment changes on caseload changes over time.

This approach is very similar to the approach used in the 1997 study. One difference is that the earlier study emphasized models that incorporated a "lead" effect of waiver policies. That is, waivers were allowed to affect caseloads one year prior to the date they were approved. While the current study also reports models that incorporate leads, the preferred models do not contain leads, since the leads may capture more than the causal effects of these policies. (For example, perhaps states with recently declining caseloads had slack resources and manpower to design and submit a waiver.) This difference explains why waivers were found to account for 31 percent of the change between 1993 and 1996 in the 1997 study, but only 12-15 percent of the change in the current study.

RESULTS

These results report the estimated effects on caseloads of each of the variables discussed above over the 1976-98 period, holding constant the effects of changes in all other variables. Based on these estimated relationships, chart 4 shows the contribution of various factors in the recent 1996-98 period.

The 1996 welfare reform legislation has been a key contributor to caseload declines since it was enacted. The average state experienced an 18 percent decline in welfare participation following the implementation of their TANF-funded state welfare plan, holding all other policy and economic variables constant. These new state programs funded by the TANF block grant account for roughly one-third of the 33 percent decline in the reciprocity rate that has occurred since 1996 (Chart 4).

As reported in the earlier CEA study, welfare waivers that were implemented prior to PRWORA explain a substantial share of the caseload decline from 1993 to 1996. States that implemented major waivers experienced an 8-9 percent greater decline in welfare participation than states that did not, holding all other policy and economic variables constant. This accounts for 12-15 percent of the overall decline between 1993-96.

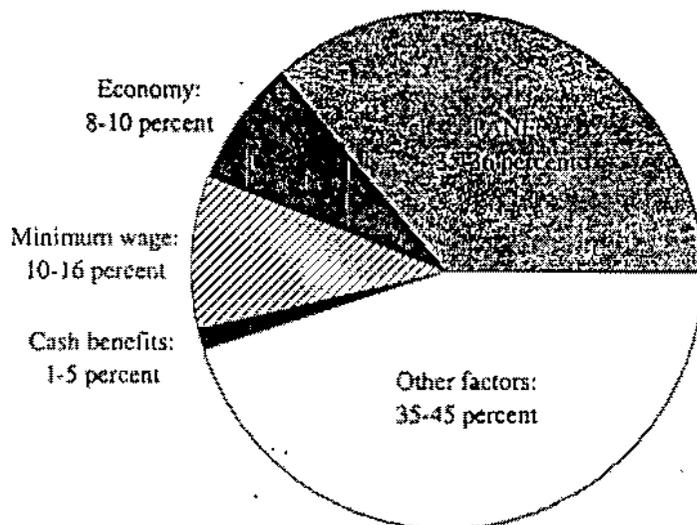
The strong labor market has made work opportunities relatively more attractive, drawing people off welfare and into jobs. The unemployment rate has not declined as much in the post-TANF period (1996-98) as it did in the 1993-96 waiver period. As a result, the share of the decline in the caseload that is attributable to improvements in the labor market was much higher in the 1993-96 period (26 to 36 percent) than in the 1996-98 period (8 to 10 percent). This study reaffirms the importance of maintaining a healthy macroeconomy with low unemployment rates in order to help families move off

and remain off of welfare. Any future 1-percentage-point increase in unemployment is likely to produce a 5 to 7 percent increase in welfare caseloads.

The study also finds that increases in the minimum wage have made work more attractive and, as a result, caused welfare participation to decline. The estimates suggest that a \$0.50 increase in the minimum wage has been associated with a decline in welfare participation of 4 to 6 percent. Hence, the recent minimum wage increases have helped reduce welfare rolls (Chart 4).

As many other studies have confirmed, higher welfare benefit levels result in higher caseloads. As noted above, this need not reflect any behavioral differences in higher-benefit states, but may only be due to the fact that higher benefits typically imply that a larger share of the population is eligible to receive public assistance.

Chart 4. Percentage of Change in Participation from 1996-98 Attributable to Each Factor



The specific program design adopted by a state can affect its caseload declines. The study examines the effects of a number of specific policies, including time limits, earnings disregards, work sanctions, family caps, and work exemptions on the size of the caseload. We estimate the effects of these policies regardless of whether they were implemented as part of a state's waiver plan or a TANF-funded plan. Our results on the effects of specific policies should be interpreted with caution, since only a limited number of states have implemented many of these policies for only a relatively short period of time. The primary results with regard to these policies are:

- Time limits have the expected negative effect, but this is not precisely estimated (very few participants have actually hit time limits in any state.)
- Higher earnings disregards raise participation modestly.

- Strong work sanctions are associated with declines in welfare participation.
- Contrary to expectations, family caps are associated with an increase in caseloads.
- Work exemption policies based on the age of the youngest child do not play a substantial role in determining caseloads.

CONCLUSIONS

The large sustained declines in caseloads provide one piece of evidence about the effectiveness of welfare reform efforts. This study suggests that caseload declines have occurred in part because of a strong economy with low unemployment rates. However, policy changes by state and Federal governments have been even more important in explaining the post-1996 decline than the strong labor market. The new state programs implemented following the enactment of PRWORA, most of them focused on increasing work effort among welfare participants, have been the most important identifiable factor explaining the decline from 1996-1998. Increases in the minimum wage, at the Federal level and among some states, have also reduced caseloads.

However, there are multiple indicators of the impact of welfare reform, including changes in work and earnings among welfare leavers, in marriage rates and out-of-wedlock pregnancies, and in poverty rates. The Clinton Administration is collecting and tracking information on all of these measures in order to fully assess the impact of welfare reform.

Technical Report:

**THE EFFECTS OF WELFARE POLICY AND THE ECONOMIC
EXPANSION ON WELFARE CASELOADS: AN UPDATE**

August 3, 1999

A Report by the Council of Economic Advisers

This study could not have been completed without the generous assistance of the Department of Health and Human Services in providing data and program information.

THE EFFECTS OF WELFARE POLICY AND THE
ECONOMIC EXPANSION ON WELFARE CASELOADS: AN UPDATE

EXECUTIVE SUMMARY

This study investigates the causes behind recent changes in welfare caseloads, updating a 1997 CEA report of caseload change.

- *The fall in welfare caseloads has been unprecedented, wide-spread, and continuous, and employment of welfare recipients has increased.* 14.1 million people received welfare in January 1993, and this number had fallen to 7.3 million by March 1999, according to estimates released today (August 3, 1999). In 31 states the caseload is less than half of what it was when President Clinton took office, and all states have experienced double-digit percentage declines. For 22 states, the percent drop during 1998 was larger than during 1997 (from January to December). Previous analyses by the Department of Health and Human Services show that the percentage of welfare recipients working tripled between 1992 and 1997, and an estimated 1.5 million adults who were on welfare in 1997 were working in 1998.
- *The 1996 legislation has been a key contributor to the recent declines.* PRWORA produced a dramatic change in welfare policy: work and self-sufficiency became a primary goal; state and local governments were given much greater control of their programs; and states experimented with a host of program designs. The evidence suggests that these changes caused a large drop in welfare participation, a drop that is independent of the effects of the strong labor market. The estimates imply that TANF has accounted for roughly one-third of the reduction from 1996 to 1998, the last year of data analyzed in this study. In the earlier years, 1993-1996, most of the decline was due to the strong labor market, while welfare waivers played a smaller yet important role.
- *The strong labor market has made work opportunities relatively more attractive, drawing people off welfare and into jobs.* The unemployment rate has not declined as much in the post-TANF period as it did in the 1993-96 waiver period. As a result, the share of the decline in the caseload that is attributable to improvements in the labor market was much higher in the 1993-96 period (roughly 26 to 36 percent) than in the 1996-98 period (8 to 10 percent).
- *Past increases in the minimum wage have made work more attractive and, as a result, caused welfare participation to decline.* The estimates imply that about 10 percent of the caseload decline was due to increases in state and federal minimum wages.
- *The specific program design adopted by a state can affect its caseload declines.* The study examines the effects of a number of specific policies, including family caps, earnings disregards, time limits, work exemptions, and work sanctions on the size of the caseload.

The large sustained declines in caseloads provide one piece of evidence about the effectiveness of welfare reform efforts. However, there are multiple indicators of the impact of welfare reform, including changes in work and earnings among welfare leavers, in marriage rates and out-of-wedlock pregnancies, and in poverty rates. The Clinton Administration is collecting and tracking information on all of these measures in order to fully assess the impact of welfare reform.

THE EFFECTS OF WELFARE POLICY AND THE ECONOMIC EXPANSION ON WELFARE CASELOADS: AN UPDATE

INTRODUCTION

The number of people receiving welfare has been declining at record rates. After peaking in March 1994, welfare caseloads have dropped by 48 percent through March 1999; At that time, just 7.3 million people representing 2.7 percent of the population were receiving welfare. Not since 1967 has such a small share of the population relied on welfare.

Not only have the declines been large, they have been widespread and continuous (Table 1). Between 1993 and 1998 (this report examines caseload changes through December 1998), all 50 states and the District of Columbia experienced double digit percent reductions in welfare participation, and in most states the declines were unprecedented. Thirty-seven states have experienced drops of at least one-third, and in 23 states the number of participants is less than half of what it was in 1993. And although a substantial share of the reduction occurred between 1994 and 1996, in many states the largest declines have occurred more recently. In fact, in 22 states the percentage decline in 1998 was greater than it was in 1997 (from January to December). And in almost all states (45) caseloads were still declining during the final months of 1998.

Two primary factors have been posited to explain the recent caseload changes: the strong labor market, and changes in welfare policy. The nation is in the midst of the longest peacetime expansion in its history, with low unemployment and rising wages. Moreover, gains in employment and wages have been experienced by groups who have typically had high rates of welfare use. Expanding labor market opportunities have made work more attractive to potential welfare participants, reducing their need for public transfers.

While the labor market has improved since 1992, there have been substantial changes in welfare policies throughout the past decade. In the early 1990s a growing number of states requested waivers from the traditional welfare program, Aid to Families with Dependent Children (AFDC), allowing them to experiment with alternative policies such as time limits, family caps, work requirements, and

Table 1. Changes in the Number of Recipients in Each State

State	Number of recipients		Percentage Change From		
	1993	1998	93 to 96	96 to 98	93 to 98
Alabama	138,465	54,635	-26	-46	-61
Alaska	37,078	29,582	-1	-19	-20
Arizona	199,153	102,511	-16	-39	-49
Arkansas	71,989	32,633	-21	-43	-55
California	2,511,293	1,998,618	3	-23	-20
Colorado	122,890	50,746	-22	-47	-59
Connecticut	162,481	117,777	-2	-26	-28
Delaware	27,736	15,820	-16	-32	-43
DC	69,549	54,856	0	-21	-21
Florida	691,053	261,581	-22	-52	-62
Georgia	398,077	185,052	-15	-45	-54
Hawaii	57,336	46,724	16	-30	-19
Idaho	21,877	3,867	1	-83	-82
Illinois	694,050	476,576	-7	-26	-31
Indiana	215,367	111,176	-35	-21	-48
Iowa	102,438	65,665	-16	-24	-36
Kansas	88,363	34,536	-26	-47	-61
Kentucky	220,766	119,360	-22	-31	-46
Louisiana	259,762	124,800	-12	-46	-52
Maine	66,914	39,423	-18	-28	-41
Maryland	219,998	116,456	-11	-40	-47
Massachusetts	321,219	167,043	-28	-27	-48
Michigan	689,139	332,240	-26	-35	-52
Minnesota	192,173	143,685	-12	-15	-25
Mississippi	168,924	52,523	-26	-58	-69
Missouri	262,382	147,105	-14	-35	-44
Montana	34,875	19,540	-13	-35	-44
Nebraska	47,840	36,665	-20	-4	-23
Nevada	36,009	25,472	-2	-28	-29
New Hampshire	29,797	15,409	-22	-34	-48
New Jersey	345,370	196,947	-19	-30	-43
New Mexico	97,246	74,170	2	-25	-24
New York	1,215,526	886,746	-5	-23	-27
North Carolina	335,620	169,144	-20	-37	-50
North Dakota	18,215	8,541	-28	-35	-53
Ohio	712,277	340,179	-24	-37	-52
Oklahoma	135,762	61,191	-27	-38	-55
Oregon	117,852	46,001	-31	-43	-61
Pennsylvania	610,531	360,009	-14	-32	-41
Rhode Island	62,187	54,150	-8	-6	-13
South Carolina	146,280	60,110	-22	-48	-59
South Dakota	19,913	9,653	-21	-39	-52
Tennessee	310,486	149,089	-20	-40	-52
Texas	784,816	370,857	-16	-44	-53
Utah	52,144	28,258	-25	-28	-46
Vermont	28,301	19,643	-12	-21	-31
Virginia	194,765	99,053	-20	-36	-49
Washington	289,965	202,573	-6	-25	-30
West Virginia	118,113	38,638	-25	-56	-67
Wisconsin	235,247	40,167	-33	-75	-83
Wyoming	17,859	2,471	-32	-80	-86
Total	14,007,468	8,199,666	-13	-33	-41

Data are the average monthly caseloads for the calendar year.

a variety of other options. During the Clinton Administration (from the beginning of 1993 to 1996), 43 states received welfare waivers, more than any previous Administration. At the federal level, welfare policy was changed dramatically by the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA), which replaced the AFDC program with the Temporary Assistance for Needy Families (TANF) block grant. Under PRWORA, welfare became more work-focused and time-limited: with few exceptions, federal welfare assistance is strongly linked to the recipient's efforts to find a job. In most cases, adults cannot receive federal aid for more than a total of 5 years during their lifetime, and some states have chosen to set shorter time limits. PRWORA also shifted primary responsibility for welfare program design and management to States and localities.

In 1997, the Council of Economic Advisers issued a report using 1976 to 1996 data that examined the reasons for the decline in caseloads between 1993 and 1996. That study found that roughly 45 percent of the decline was accounted for by improved labor market conditions, about 30 percent was due to welfare waivers, and the remaining 25 percent was explained by other factors. Several subsequent studies were conducted that examined changes in welfare caseloads during this and earlier periods (Bartik and Eberts, 1998; Blank, 1997; Figlio and Ziliak, 1998; Levine and Whitmore, 1998; Moffitt, 1999; Stapelton, 1998; Wallace and Blank, 1998; Ziliak, Figlio, Davis, and Connolly, 1997).

Since 1996 caseloads have continued to fall, the labor market has grown even stronger, and welfare policy has been fundamentally changed, making it important to update the earlier report. This study extends the earlier study on several dimensions. Most importantly, the effects of TANF are assessed by analyzing data through 1998. In addition, the study provides more recent evidence of the effects of labor market conditions on changes in caseloads, and the study examines whether increases in the minimum wage also played a role.

The large sustained declines in caseloads provide one piece of evidence about the effectiveness of welfare reform efforts. However, there are multiple indicators of the impact of welfare reform, including changes in work and earnings among welfare leavers, in marriage rates and out-of-wedlock

pregnancies, and in poverty rates. The Clinton Administration is collecting and tracking information on all of these measures in order to fully assess the impact of welfare reform.

FACTORS AFFECTING CASELOAD TRENDS

Economic Conditions

Caseloads normally fluctuate with the business cycle, rising in periods of high unemployment and declining when unemployment falls. Chart 1 illustrates this relationship between labor market opportunities and welfare participation (i.e., the number of welfare recipients divided by the total population) over the past three decades. When unemployment increased in the early 1970s, so too did welfare participation. The increase in welfare participation in the late 1980s and early 1990s, as well as the decline that began in 1994, also correspond with changes in employment opportunities during these periods. However, the trend in welfare participation does not always match that in unemployment, most notably when other important changes are taking place, including changes in family structure and welfare policies. Indeed, increases in welfare participation during the recession of the early 1980s were truncated by eligibility restrictions that were part of President Reagan's welfare reform efforts in 1982. Over the entire 1980s the simple correlation between unemployment and welfare participation was much lower (0.23) than in the 1970s (0.41) or the 1990s (0.78).

Chart 1. Welfare Participation and Unemployment Rates

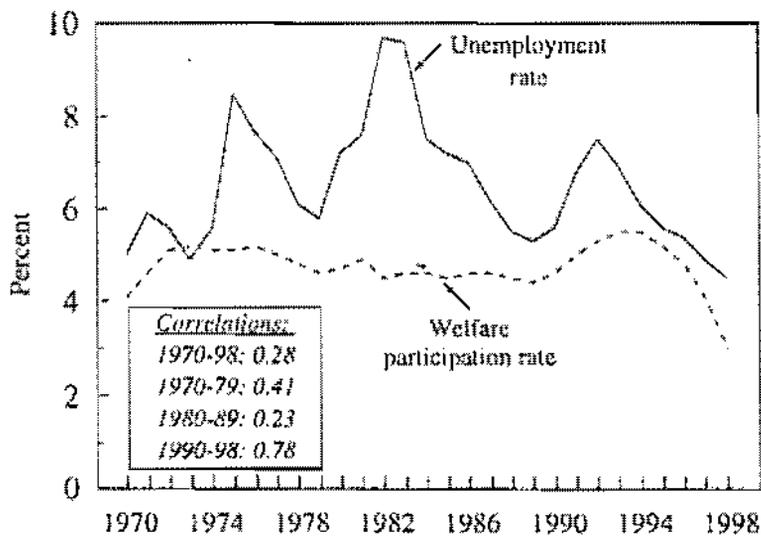
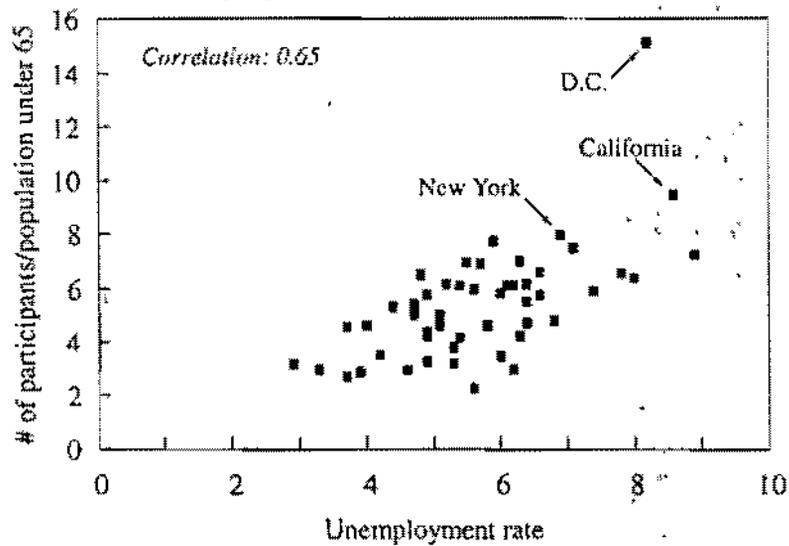
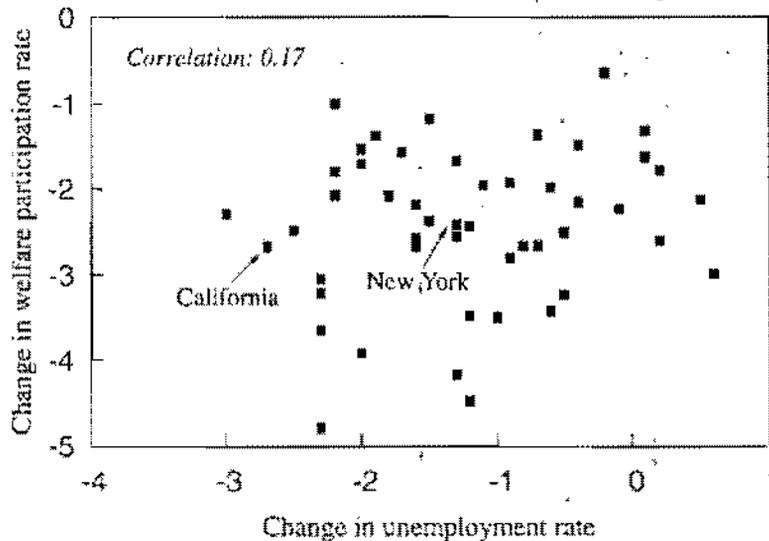


Chart 2. Welfare Participation Rate Versus Unemployment Rate for Each State, 1994



Economic conditions vary across states as well as over time. Chart 2 displays a scatterplot of the unemployment rate versus the welfare participation rate for each state and the District of Columbia in 1994, when participation was near its peak. (California and New York are highlighted because they are home to roughly one-third of the nation's welfare recipients, and DC is highlighted because it is an outlier on this Chart.) This relationship is quite strong, with a simple correlation of 0.65. While this correlation suggests a strong role for economic factors, it is likely to over-state the true role of economic factors. Fixed characteristics of states that cause them to have high unemployment rates may also lead them to high welfare participation. These characteristics include the state's age distribution, educational level, metropolitan/rural population shares, and racial and ethnic composition. While these factors may change over time, such change occurs more slowly than changes in policy or economic conditions. One way to abstract from these factors is to examine changes over time within states, which is the approach employed in the econometric models below. Chart 3 displays the simple relationship between the *change* in the unemployment rate and the *change* in the welfare participation rate in each state between 1994 and 1998 to illustrate the potential importance of these fixed characteristics. The chart demonstrates that once state fixed effects are removed by examining changes in these variables, the relationship is not nearly as strong as the simple cross-sectional one, with a correlation of 0.17.

Chart 3. Change in Welfare Participation Rate Versus Change in Unemployment Rate for Each State, 1994-98



Federal and State Policies

Welfare Waivers. Since 1962, the Secretary of Health and Human Services has had the authority to waive federal welfare requirements if a state proposed experimental or pilot programs that furthered the goals of AFDC. Although there were a few waivers granted in the early 1980s, it was not until the early to mid-1990s that major, state-wide waivers became widespread.

These waivers varied substantially across states, and in many cases they differed greatly from the rules under AFDC. Some waivers increased the amount of earnings recipients were allowed to keep and still be eligible for welfare. Other waivers expanded work requirements to a larger number of recipients, established limits on the length of time recipients could remain on aid, permitted states to sanction participants who failed to meet work requirements, or allowed states to eliminate benefit increases to families who conceived and gave birth to children while on welfare (the so-called "family cap"). Given the widespread use of waivers and the degree to which these policies differed from traditional AFDC policy, there is substantial reason to believe that waivers contributed to changes in welfare caseloads.

PRWORA. In August of 1996, President Clinton signed the Personal Responsibility and Work Opportunity Reconciliation Act into law, dramatically changing federal welfare policy. PRWORA

was designed to emphasize self-sufficiency and employment in place of welfare dependency, and it gave states greater flexibility to design and implement programs to achieve these goals. Benefits are time-limited; adults usually cannot receive federal aid for more than 5 years during their lifetime, and some states have chosen to set shorter time limits. Most recipients must also participate in a work activity within two years to continue receiving aid.

Under the TANF block grant established by PRWORA, federal assistance consists of an annual fixed transfer to each state equal to the amount of federal transfers the state received in fiscal year 1994, 1995, or the average of 1992-4, whichever was higher. In addition, most of the authority to design welfare programs was passed along to the states, who are required to have half of all recipients working by 2002 (40 percent by 2000). As a result, there are now substantial differences in how welfare programs operate across the nation. Some states increase benefits to welfare families who have additional children, while others do not. Some states stop payment of benefits to the entire family at the first instance of their failure to meet work activity requirements, while other states never sanction more than the adult. And some states allow welfare recipients to keep a substantial portion of their labor market earnings without reducing their welfare payments, while others do not.

AFDC/TANF Benefit Levels. States have long set their own level of maximum monthly benefit payments, with variation by family size and composition. All else equal, higher benefit levels are expected to increase the number of participants. Over the period of this study, the inflation-adjusted level of welfare benefits fell in almost all states. In some cases the state explicitly changed benefits, but in most states benefit levels were fixed and eroded over time with inflation.

Minimum Wage. The real value of the federal minimum wage decreased substantially between 1976 and 1989. A \$0.45 legislated increase in 1990, followed by a \$0.45 increase in 1991, offset some of this long-run decline, but by 1995 the real minimum wage (\$4.55) was nearly as low as it was in 1989. The minimum was then legislatively raised by \$0.50 in 1996 and an additional \$0.40 in 1997. During the period analyzed in this study, 1976-1998, several states established minimum wage levels

that were above the federal minimum that prevailed at that time.¹

A higher minimum wage can make work more attractive, giving welfare participants a greater incentive to enter the workforce and leave public assistance. On the negative side, if a higher minimum wage reduces employment of low-skilled workers, some people may lose their jobs and enter welfare: At the same time, an increase in the minimum wage may lead employers to substitute away from teenagers (a relatively large share of whom work for the minimum wage) and towards older welfare workers (who are perhaps not as likely to work at the minimum wage, but more likely to be working just above the minimum than teenagers). The evidence on the disemployment effects of the minimum wage is mixed. Some studies have found that a 10 percent increase in the minimum wage causes a 1 to 2 percent decline in employment (e.g., Neumark and Wascher, 1992; Neumark and Wascher, 1994; or the estimates surveyed by Brown et al., 1982), while other studies have found no disemployment effects (e.g., Katz and Krueger, 1992; Card, 1992a; Card, 1992b; Card, Katz, and Krueger, 1994; Bernstein and Schmitt, 1998; Card and Krueger, 1998). Two recent studies have examined the effects of minimum wages on welfare caseloads, with one finding a negative effect over the 1990-91 period (Turner, 1999) and the other finding a positive effect over the 1983-96 period (Page, Spetz, Millar, 1999).

There are a variety of other factors that may affect caseloads, including the Earned Income Tax Credit, the availability of child care, transportation, and Medicaid coverage, family structure, and out-of-wedlock births. Although our models do not directly examine these factors, our approach controls for them indirectly, as described in the next section.²

ECONOMETRIC SPECIFICATION

Two approaches are implemented to estimate the effects of policy and economic conditions over the

¹ The states that had minimum wages above the federal level during 1976-98, and the years in which they had such policy, are: Alaska from 1976-98, California from 1989-90, Connecticut from 1976-90 and 1992-98, DC from 1976-98, Hawaii from 1976-77, 1988-90, and 1993-98, Iowa from 1990 and 1992-95, Maine from 1985-1990, Massachusetts from 1987-89 and 1995, Minnesota from 1988-90, New Hampshire from 1987-89, New Jersey from 1993-96, Oregon from 1990-98, Rhode Island from 1987-90 and 1992-96, Vermont from 1987-89 and 1995-98, Washington from 1989-90 and 1995-96.

² Of particular interest is the EITC, but because the most significant EITC changes are enacted nationally and effect

period 1976-1998. Both approaches utilize the same dependent variable, use the unemployment rate to capture the effects of labor market conditions, and specify the minimum wage and welfare benefit levels in identical ways. The difference between the two models is the specification of the remaining welfare policy variables. The first model uses two simple 0/1 indicator variables: one to capture the period during which a major waiver was in effect in each state, and one to capture the period during which TANF was in effect in each state. Specifically, Model (1) is:

$$(1) \quad \ln R_{st} = \text{Waiver}_{st} \beta_w + \text{TANF}_{st} \beta_{\text{TANF}} + \ln \text{Benefits}_{st} \beta_b + \ln \text{MinWage}_{st} \beta_{mw} + \text{Unemployment}_{st} \beta_u + \gamma_s + \gamma_t + \text{trend} * \gamma_x + \varepsilon_{st}$$

The variables are defined for state s in calendar year t as follows:

- R*: the ratio of the number of recipients to the population under 65 years of age (the number of recipients is obtained from administrative reports on AFDC/TANF); the model estimates the natural log of this ratio.
- Waiver*: an indicator variable that takes the value of one if the state had a major waiver in effect; the indicator is turned off when TANF is implemented in the state.³
- TANF*: an indicator variable that takes the value of one if TANF was in effect in the given state (the TANF implementation date varied across states, as discussed below).
- Benefits*: the maximum monthly benefit for a family of three on AFDC/TANF.
- MinWage*: the value of the state-specific minimum wage expressed as a monthly amount (to make comparable with the benefits variable) assuming employment for 30 hours per week for 4.33 weeks. (In most cases, this is the federal minimum wage.)⁴

all persons at the same time, these effects are subsumed by the model's time fixed effects.

³In most cases, the waiver concept becomes meaningless once TANF was implemented because states were given broad control over their welfare policies. In particular, states could operate the broad categories of policies under TANF, whether or not they were continuing a waiver. However, if a state continued a time limit waiver, then participants' time clocks in that state would have been running prior to TANF implementation. As a result, these participants would reach their time limits more quickly than if their clock would have been reset on the date of TANF implementation.

Unemployment: the unemployment rate (current, lagged one year, lagged two years)
 γ_s : state fixed effects
 γ_t : year fixed effects
*trend** γ_s : linear state-specific time trends

All dollar values are expressed in 1998 dollars using the CPI-U-X1.

The second approach examines the effects of specific welfare policies, regardless of whether the policy was implemented under waivers or TANF. That is:

$$(2) \ln R_{st} = X_{st} \beta_x + \ln Benefits_{st} \beta_b + \ln MinWage_{st} \beta_{mw} + Unemployment_{st} \beta_u + \gamma_s + \gamma_t + trend * \gamma_s + \epsilon_{st}$$

In Model (2), X_{st} represents a vector of variables that describe specific policies that are in effect in state s in year t . There are a variety of policies that could be analyzed. The five policies that were examined were chosen because, a priori, they were expected to significantly influence participation and they could be quantified based on available sources. The five policies are:

1. Termination or work requirement time limits are represented by an indicator variable for whether the state either terminates eligibility, reduces benefits, or requires participants to work (not just participate in a "work activity") after a given duration on aid. The date that participants first began to reach the time limit was used as the date that this policy came into effect. (These time limits had become binding in too few states for us to examine the distinct effects of each of these three policies.)
2. A second indicator variable takes the value of 1 (0 otherwise) if the state has a family cap, that is, the state does not increase benefits for participants who give birth to or conceive a child while on aid.
3. Work exemptions are represented by three indicator variables based on the state's policy toward families with young children: the first takes the value of 1 if the state exempts mothers with a child as old as 6 months to 3 years, 0 otherwise; a second indicator takes...

⁴ If the state had a range of minimum wages, the highest minimum wage was used to construct this variable. In the year that the minimum wage changed, the weighted average of the minimums in effect during that year were used in the analysis, where the weights are equal to the share of the year in which each minimum wage was in effect.

the value of 1 if the exemption applies to mothers with a child newly born to 6 months old (and not older), 0 otherwise; and a third takes the value of 1 if the state allows no exemptions based on the age of the mother's children, 0 otherwise. Years in which a state has a traditional AFDC/JOBS exemption policy serves as the reference group. These four groups are mutually exclusive.

4. A set of three indicator variables capture the aggressiveness of work sanction policies. One indicator represents states that impose full family sanctions with the first offense ("full/full"), a second indicator represents states that impose full family sanctions only after repeated offenses ("partial/full"), and a third indicator represents states whose maximum sanction is a partial family sanction ("partial/partial"). States that impose no sanction or some lesser sanction, which was the case under traditional AFDC, serve as the reference group.
5. The aggressiveness of disregarding earned income is represented by the amount of earnings disregard if a welfare recipient earns \$750 per month (in 1998 dollars). When the disregard formula varies with duration on welfare, the disregard applicable for the longest duration (typically more than 3 months) is assumed.

The "policy oriented" approach used in Model (2) has the advantage of being able to identify the specific policies that influence caseloads. However, there a number of TANF policies and practices that may affect participation that could not be captured in Model 2 because of data limitations, such as diversion policies, work requirements and targets, and welfare office culture. The simple indicator-variable approach used in Model 1 is more effective in capturing the total effect of waiver and TANF policies.

State, year, and state-specific time trends are included to capture unobserved factors, such as family structure and other policies, that may be correlated with the observed variables. Most policies were not in effect the entire calendar year that they were implemented. In these cases, fractional values are used corresponding to the share of the calendar year that the policy was in effect. The model is estimated with weighted least squares, where the weight is the population under 65 in state s in year t . The standard errors of the coefficient estimates are corrected for general forms of

heteroscedasticity.⁵

Before discussing the results, it should be acknowledged that a maintained assumption in this study is that welfare policies are exogenous to welfare participation (after controlling for the factors in the models described above). All previous studies have also made this assumption. Endogenous policy is probably more likely to affect the estimates of Model 2. While most states received waivers, and every state has implemented TANF, the specific types of policies vary considerably. For example, states whose caseloads were increasing (or not decreasing as much as desired), may have adopted relatively harsh policies.⁶

DATA

Using annual calendar year data from 1976 to 1998 on all states and the District of Columbia, the analysis is based on 1,173 observations. Most of the data used in the analysis come from well-known sources, with a few exceptions (described below). The federal and state minimum wage data were obtained from the Wage and Hours Division of the Bureau of Labor Statistics.

Welfare Waivers

The data that are unique to this study are the waiver implementation dates and TANF policies. These policies are difficult to categorize and measure, and the pace and intensity of their implementation typically vary across and within states. Experts from the Department of Health and Human Services as well as non-government research institutions were consulted to characterize these policies as fully as possible. Specifically, information on waivers was obtained from the Department of Health and Human Services. Most waivers permitted simultaneous implementation of various provisions. For example, the California Work Pays Demonstration increased the AFDC resource limit for recipients to \$2,000, increased the excludable equity value for a vehicle to \$4,500, allowed recipients to place

⁵As a check of the robustness of the estimates, model 1 in Table 2 was re-estimated without correcting the standard errors, and all statistically significant coefficients remained so at the 0.01 level. Estimates when the weights are not used are reported in Table 4.

⁶One set of studies has modeled welfare caseloads by including the lagged value of the dependent variable as an explanatory variable (Ziliak et al, 1997; Figlio and Ziliak, 1998). This approach is an alternative way to control for past history. We have not chosen this specification, however, and we instead include year effects, state effects, and state-specific time trends in models of the level of welfare participation.

up to \$5,000 in restricted accounts which did not count against the resource limit and which may only be withdrawn for certain uses, and (among other things) required pregnant or parenting teens (under 19) who did not possess a high school diploma or equivalent to participate in CalLEARN.

Like the 1997 CEA study, this report focuses on six "major" types of waivers that received approval to be implemented state-wide⁷: termination time limits, work requirement time limits, family caps, JOBS exemptions, JOBS sanctions, and the earnings disregard. Each of these policies was discussed in detail in the appendix to the 1997 CEA Technical Report.⁸

Some of the waivers that were approved for state-wide implementation were initially implemented state-wide, some were implemented in selected areas of the state, while still others began in small regions of the state but were eventually phased-in state-wide. Information on the pace of implementation is not available for all states. Therefore, the date that is used to signal implementation is the date that the waiver began to be implemented. The earliest dates that these waivers were approved and implemented in each state are listed in Table A1.⁹

PRWORA & TANF

PRWORA was signed into law in August of 1996, but a given state could not begin its TANF-funded program until that state submitted its TANF plan and it was certified as complete by the federal government. Beginning on the date the state formally implemented its TANF plan, the state could begin to draw down federal funds and was subject to all of the requirements and restrictions in TANF. The earliest *official* implementation date was September 1996 and the latest was July 1997.

⁷ In a few instances waivers were examined which were not approved to be implemented state-wide but affected a large share of the state's caseload.

⁸ It was determined that the waiver in West Virginia, which was considered a "major" waiver in the 1997 CEA study, did not in fact meet this requirement (Martini and Wiseman, 1997), which is reflected in Table A1.

⁹ Somewhat smaller effects are estimated when the date of implementation is used instead of the date of approval, which was utilized in the 1997 CEA study, as described in appendix A.

when all states were required to begin operating under TANF. The date that the state formally implemented its TANF plan is the date that is used to construct the TANF indicator variable in Model (1). However, in some states the initial plan was simply a placeholder, designed to allow the state to begin to draw down its TANF block grant, and some state policies were not changed until a later date. Therefore, the *actual* implementation date may differ from the *official* date. In particular, in five states (California, Mississippi, New Jersey, New York, and Wisconsin) specific information was available indicating that the policies most associated with TANF – time limits, work requirements, sanctions, etc. – were not implemented until a later date; in these cases, the later date was used to construct the TANF indicator.¹⁰ Table A1 reports the official and actual TANF implementation dates for each state.

To specify Model (2) the policies that were in effect in each state in each year were determined. To construct indicator variables for the existence of a termination or work requirement time limit and a family cap, we used the date that the relevant waiver was implemented (for time limits, the date that participants began to hit the limit) and assumed that the waiver continued to be in effect until (at least) TANF was implemented in that state (i.e., the date listed in Table A1).¹¹

For the TANF period, we use information on state TANF plans as of October 1997 (Gallagher et al., 1998) along with the date the current policy (as of October 1997) was implemented to determine which policies were in effect in each state in each year. It is assumed that the policies in place in October 1997 were not changed by December 1998, which is the end of our sample period. If a policy was implemented and rescinded between the date that TANF was implemented and October 1997, we would not capture this policy change. However, the earliest TANF implementation was October 1996, just one year prior to our TANF information, and many states implemented TANF in the first 6 months of 1997. Therefore, it is unlikely that a policy was both implemented and rescinded within such a short period.¹²

¹⁰ Model 1 in Table 2 was re-estimated without using this additional information for these five states. The coefficient estimates changed very little; the largest change was for the TANF indicator, which increased to -23.8 with a t-statistic of 2.70.

¹¹ Again, the date that was used was the date that the policy initially began to be phased in within the state.

¹² New Mexico implemented its TANF program in July 1997, but it was found unconstitutional in September of that year. A revised TANF program was implemented in April 1998.

RESULTS

Table 2 contains the estimates of Models 1 and 2. The table also reports a version of each of these models that excludes state-specific time trends. The rationale for including these trends is to control for unobserved changes over time that are specific to each state. For example, if there is a long-run increase in female-headed households, and the rate of this increase varies between states, other variables in the models may be biased if this factor is not controlled. On the other hand, some of the interesting and important variation for identifying effects of some of the variables of interest may be reduced substantially by the inclusion of these trends, making it difficult to identify their effects. For example, cash benefit levels follow a long-run trend in some states, and including the state-specific trends leaves much less variation in benefits to identify its effects. Therefore, estimates with (Models 1 and 2) and without (Models 1A and 2A) the state-specific trends are reported.

Estimates from Model 1

Waivers had a large and precisely estimated effect on welfare participation (Table 2). The estimates in Models 1 and 1A imply that states that implemented a major waiver experienced a decline in participation that was 8 to 9 percent greater than other states. The implementation of TANF is associated with a decline in participation of 18 percent, roughly double the size of the effect of waivers.

All other statistically significant estimates in Models 1 and 1A alter participation in the expected direction. Higher cash welfare benefits raise participation. The estimates in Model 1 imply that a \$50 increase in the monthly benefit above its 1998 average monthly value would increase participation by 1.8 percent. For the reasons described above, the estimates from Model 1A, which exclude the state-specific linear trends, are much larger and imply that the same \$50 increase would lead to a 6.2 percent increase in participation.

Table 2.
Baseline Specifications
(Coefficient estimates are multiplied by 100)

	Model 1		Model 1A		Model 2		Model 2A		Mean
	Beta	t-stat	Beta	t-stat	Beta	t-stat	Beta	t-stat	
Any waiver	-9.40	2.90	-7.99	2.90					0.08
TANF	-18.84	4.37	-18.12	1.75					0.09
Log maximum monthly benefit	14.98	1.93	51.74	6.20	15.01	2.37	53.84	7.63	1.55
Log monthly minimum wage	-39.59	4.02	-63.91	3.61	-25.59	2.27	-51.95	2.74	1.91
Unemployment rate:									
Current	-0.36	0.74	0.20	0.30	-0.30	0.61	-0.13	0.20	6.63
1-year lag	1.50	2.40	1.70	1.88	1.29	2.06	1.65	1.92	6.79
2-year lag	4.27	8.92	5.13	7.40	3.94	8.34	4.77	7.39	6.83
<i>Specific welfare policy variables (X)</i>									
Termination/work req. time limit					-3.75	0.76	-4.30	0.73	0.03
Family cap					6.71	2.19	8.21	2.35	0.05
Work exemption based on age of youngest child:									
Traditional AFDC & JOBS exemption (reference group)									
Child as old as 6 months to 3 years					12.37	2.46	-2.79	0.57	0.05
Child newly born to 6 months old					11.56	1.53	3.05	0.40	0.03
No exemptions based on age of youngest child					4.86	0.77	0.81	0.12	0.01
Work sanctions:									
Traditional AFDC or JOBS (reference group)									
Partial/Partial					-9.71	2.52	-1.36	0.32	0.05
Partial/Full					-18.14	3.76	-22.76	4.20	0.04
Full/Full					-39.36	5.57	-33.53	4.51	0.03
Log earnings disregard					5.38	2.40	5.86	2.00	0.64
State-specific trends?									
	Yes		No		Yes		No		

All models include state and year effects. Estimates use the population under 65 as weights and robust calculation of standard errors. N=1173. Weighted mean of the dependent variable: 1.589

Increases in the minimum wage are found to decrease welfare participation. In particular, consider an increase in the minimum wage by \$0.50. If this increase were on top of the average minimum that existed in 1998, monthly earnings at the minimum wage (evaluated at 30 hours per week, full month) would increase by \$65. This rise would translate into a decline in welfare participation of roughly 3.7 to 5.9 percent.¹³

Tight labor markets, as measured by the unemployment rate, reduce welfare participation. The models demonstrate the lagged nature of the unemployment effects: In fact, the largest effects are for unemployment lagged two years. Model 1 implies that a one percentage point decrease in the unemployment rate that persists for three years is associated with a 5.41 percent ($4.27+1.50-0.36$) decline in welfare participation. The estimates are substantially higher if state-specific time trends are not included in the model.

Estimates from Model 2

The effects of cash benefits, minimum wages, and the unemployment rate estimated for Models 2 and 2A are similar to those estimated in Models 1 and 1A, respectively. The welfare reform policy variables included in Models 2 and 2A show mixed results. The coefficient on the time-limit indicator variable is negative, as expected, but it is not precisely estimated. It is important to note that all participants who have hit time limits by the end of 1998 were doing so under a waiver policy. And because only a small number of states had time limit waivers, a relatively small number of participants had hit a time limit. Therefore, it is not surprising that, through 1998, time limits had not significantly altered national caseloads.¹⁴

¹³ Some studies of the disemployment effects of the minimum wage have included a measure of average state wages in their specifications. Although there are problems that arise from including this variable (see Card, Katz, Krueger, 1994 for a discussion), Model 1 in Table 2 was re-estimated including the average wages of production workers because this variable is incorporated in a large number of studies. (This variable is not available for DC or for Indiana in some years.) Including this variable causes the effect of the minimum wage to fall somewhat, but it is still large (-30.45) and precisely estimated (t-statistic of 3.39).

¹⁴ Time limits may alter participants' behavior before they actually hit the limit. For example, some recipients may leave the rolls sooner or not come on the rolls at all in order to save up time that could be used at a later date. When the date of implementation was used to construct this variable instead of the date that people first began to hit the limit, the estimated effects were actually positive. This counterintuitive result is likely due to the endogeneity issues

As expected, a higher earnings disregard raises participation (at least in the short-run), but this effect is relatively small. The estimates suggest that an increase in the disregard equivalent to \$50 on a monthly basis is associated with less than a 1 percent increase in participation. Family caps do not have the expected negative effect; in fact, they are positive and precisely estimated. Similarly, looking across Model 2 and 2A, it appears that work exemption policies based on the age of the youngest child do not play a substantial role in determining caseloads. In fact, the one significant effect is of unexpected sign.

Not surprisingly, policies that sanction recipients who do not go to work are associated with large declines in welfare participation. The effects of the work sanction policies may be due to the fact that impending sanctions cause welfare recipients (or potential recipients) to accelerate their job search and find employment, or the effect may be due to the fact that recipients did not find a job and were sanctioned. States with full family sanctions on the first violation of work requirements have much lower caseloads than other states. States whose most severe work sanction policy is a partial reduction in benefits also have lower participation, but not nearly as low as the rates for states with full family sanctions. As with all policies examined in the model, the effects of these sanctioning policies on the caseload may be distinct from their effects on other important factors, such as child health and development, illegitimacy, education, poverty, and work participation.

Relative Contribution of Each Factor

1993-96 Welfare Waiver Period. Table 3 provides estimates of the relative contribution of each factor to the change in welfare participation during two periods: 1993-1996 (the waiver period under the Clinton Administration) and 1996-98 (the TANF period). Specifically, the change in the national average of each variable (obtained by weighting by the state population under 65) is multiplied by its respective coefficient estimate to determine the change induced by that factor. The ratio of the share

raised earlier in the report. In particular, the states that chose to implement time limits under waivers may have been the states whose caseloads were increasing, or perhaps not declining as much as desired.

Table 3.
 Percentage of Change in
 Participation Attributable to Each Factor
 (Based on Estimates of Models 1 and 1A in Table 2)

Factor	Based on Model 1		Based on Model 1A	
	1993-96	1996-98	1993-96	1996-98
Welfare waivers	14.6%		12.4%	
TANF		36.2%		34.8%
Decline in unemployment	26.4%	7.8%	35.6%	10.4%
Increased minimum wage	-9.7%	9.6%	-15.6%	15.5%
Lower cash benefits	6.3%	1.4%	21.7%	4.7%
Other	62.4%	45.0%	45.9%	34.5%

of this change to the total change in participation during this period is reported in Table 3. For example, 22 percent of the population under 65 lived in states with major waivers in place in 1993.

By 1996, this share increased to 53 percent. Multiplying the change in the share living under waivers ($0.53 - 0.22 = 0.31$) by the respective coefficient estimate in Model 1 (-9.40), it is found that the expansion of waivers led to a 2.91 percent decline in participation during this period. Participation in total dropped by about 20 percent between 1993 and 1996, which implies that roughly 14 percent of the decline can be attributed to the increase in waivers.

While waivers accounted for about 14 percent of the decline from 1993-96 according to Model 1, the lower unemployment rate was responsible for 26 to 36 percent of the decline (depending on the model). Cash benefits declined by about 8 percent from 1993 to 1996, which led to a decline in participation. The actual amount of the decline that can be attributed to the benefit reduction differs substantially between the two models; 6 percent for Model 1 and 22 percent for Model 1A. The real value of the minimum wage fell between 1993 and 1996 (the increase in 1996 was in October, so it was not effective most of the year)¹⁵, which is why the minimum wage explains a negative share of

¹⁵ Recall that the minimum wage measure used in the analysis is the weighted average of the minimum wages in

the caseload decline; the caseload would have increased between 1993 and 1996 if the only change that had occurred were the decline in the real minimum wage.

TANF Period: 1996-98. Welfare participation declined by roughly 33 percent between 1996 and 1998, and TANF was a major contributing factor. Roughly one-third of the decline is due to TANF. Economic factors are still important in drawing people off welfare, but since the unemployment rate has declined relatively little since 1996, it accounts for just 8 to 10 percent of the decline in participation over this period. Higher minimum wages accounted for about 10 percent of the drop in participation, and reductions in cash benefits accounted for an additional 1 to 5 percent decline. The remaining share is unexplained and may be due to other changes in policy, practice, or behavior.

ALTERNATIVE SPECIFICATIONS

Several alternative specifications were estimated to examine the robustness of the findings, and some of these results are reported in Table 4. All of the models in Table 4 include state-specific time trends, and the estimates from Model 1 of Table 2 ("Baseline") are listed for comparison.

It has been argued that analyses of waiver policies should not utilize population weights (Martini and Wiseman, 1997). Comparison 1 demonstrates that the effects of waivers, TANF, cash benefits, and the unemployment rate are not very sensitive to whether weighting is used. However, the effects of the minimum wage are substantially larger when the weights are not used.

Quite often it is said that welfare reform would not have been as effective in reducing caseloads if it had not been for the strength of the labor market. This hypothesis is tested in Comparison 2 by

effect in the state in the given year, where the weights are equal to the share of the year that the respective minimum was in effect.

Table 4.
Alternative Specifications of Model 1
 (Coefficient estimates are multiplied by 100)

	Baseline		Comparison 1		Comparison 2		Comparison 3				Comparison 4		Comparison 5	
	Model 1		Without Population Weights		Policy & Economy Interactions		Changing Economic Effects Model A		Model B		With Leads of TANF and Waivers		Population as an Explanatory Variable	
	Beta	t-stat	Beta	t-stat	Beta	t-stat	Beta	t-stat	Beta	t-stat	Beta	t-stat	Beta	t-stat
Any waiver	-9.40	2.90	-7.34	2.95	-1.90	0.21	-8.86	2.42	-9.34	2.54	-5.53	1.82	-8.29	3.01
Any waiver, lead											-6.84	2.39		
TANF	-18.84	4.37	-18.04	2.38	-46.23	2.77	-21.28	4.23	-22.07	4.14	-15.19	3.20	-15.94	3.94
TANF, lead											-4.84	1.19		
Log max. monthly benefit	14.98	1.93	20.92	3.34	-5.44	0.78	-6.99	0.87	-6.10	0.75	14.91	1.95	29.06	4.27
Log monthly min. wage	-39.59	4.02	-67.31	4.01	-53.00	3.73	-51.59	3.81	-47.44	3.44	-40.28	4.26	-15.14	1.48
Unemployment rate														
Current	-0.36	0.74	0.63	1.36	3.21	8.51	3.17	8.80			-0.26	0.54	0.74	1.70
One lag	1.50	2.40	1.80	3.23							1.51	2.44	1.25	2.31
Two lags	4.27	8.92	3.66	8.12							4.17	8.78	2.68	6.04
Current*1976-80									1.48	1.93				
Current*1981-86									3.20	7.97				
Current*1987-92									3.87	6.03				
Current*1993-98									4.37	3.54				
Waiver*Current					-1.01	0.63								
TANF*Current					5.32	1.57								
Log(Population under 65)													-136.77	4.62

All models include state effects, year effects, and state-specific time trends. Estimates use the population under 65 as weights and robust calculation of standard errors, except in Comparison 1 where the weights are not used.

interacting the unemployment rate with the waiver indicator and with the TANF indicator.¹⁶

Although the precision of the estimate of the interaction between TANF and the unemployment rate is slightly below standard levels for determining statistical significance (with a p-value of 0.12), the coefficient estimate implies that TANF policy is more effective when unemployment is low. For example, after adjusting for other factors, TANF is estimated to reduce participation by 14.8 percent if the unemployment rate were 5.9 (as it was in California when it implemented TANF in 1998) and by 20.2 percent if the unemployment rate were 4.9 (as it was in Michigan when it implemented TANF in 1996).

It has been argued that the effects of waivers may be accounted for by an increase in the sensitivity of the caseload to labor market conditions in the 1990s (Moffitt, 1999). For this argument to hold, economic conditions must be correlated with waivers, the caseload must have become more sensitive to the unemployment rate over time, and the model must not have allowed the effects of the economic factors to change over time. Comparison 3 (Model B) tests this hypothesis by allowing the effects of the unemployment rate to differ between four periods: 1976-80, 1981-86, 1987-92, and 1993-98. (While Model B allows the effects of unemployment to vary across time, it does not include lagged unemployment effects. Therefore, the baseline model, which does not incorporate time-varying unemployment effects, is re-estimated with no lags in unemployment so that proper comparisons can be made. This specification appears as Model A in Comparison 3.) Indeed, the caseload has become more sensitive over the past two decades. A one percentage point increase in unemployment led to an increase in welfare participation of 1.5 percent in the 1976-80 period, 3.2 percent in the 1981-86 period, 3.9 percent from 1987-92, and 4.4 percent since 1993. (The 1976-80 period is statistically significantly different from each of the other three periods, but the three latter periods are not statistically significantly different from each other.) This rise may be due to the fact that most of the changes to AFDC introduced by waivers and TANF emphasize employment. This also suggests that the estimates of the contribution of the unemployment rate reported in Table 4 may be a lower bound. Most importantly for this study, however, the effects of waivers and TANF are

¹⁶In reality, people who make such statements are sometimes referring to the direct effect of labor market conditions on participation, and not the interaction.

robust to this specification, changing very little from the baseline model.

Comparison 4 permits "lead" effects of TANF and waivers. The 1997 CEA study argued that welfare policies may begin to have an effect on behavior in the year leading up to their enactment because of the heightened awareness generated by the debate surrounding their passage. Indeed, the 1997 study found that state caseloads were declining significantly in the year prior to receiving approval for a waiver. The estimates with the data through 1998 and incorporating TANF imply a fairly large and statistically significant association between welfare participation and the one-year lead of waivers; the lead of TANF is not significant. However, it is difficult to interpret these estimates. While a true causal interpretation is plausible, an alternative interpretation is that the leads are picking up unobserved differences across states or within states across time. For example, perhaps states with recently declining caseloads (or caseloads declining more -- or increasing less -- than expected) had slack resources and manpower to design and submit a waiver. In this case, waivers themselves may not be causing the decline. For this reason, the estimates without the leads are emphasized.¹⁷

The final alternative specification, Comparison 5, uses a less restrictive functional form by using the population variable as an explanatory variable instead of using it as the denominator in the dependent variable. In this model the dependent variable is simply the natural log of the number of recipients. The results are fairly stable to this specification change. However, the coefficient estimate on the minimum wage, while still negative, is reduced, and it has a p-value of 0.14.

CONCLUSIONS

There has been an unprecedented decline in welfare caseloads. The drop has occurred in every state in the nation, and it has persisted now for almost 5 years: In the earlier years, from 1993 to 1996, most of the decline was due to the strong labor market and welfare waivers. The declines in the more

¹⁷ Models that include lagged values of the waiver and TANF indicator variables were also examined to determine whether there was an effect of these policy changes above and beyond the initial-year change. Although in some specifications there were substantial lagged effects, the estimates were quite sensitive to specification, especially sample weighting and inclusion of data from California and New York.

recent period, from 1996 to 1998, have been very large, and the single most important factor that can be identified is the implementation of TANF. PRWORA produced a dramatic change in welfare policy: work and self-sufficiency became a primary goal; state and local governments were given much greater control of the programs they ran; and states experimented with a host of program design changes. The evidence suggests that these changes have caused a large drop in welfare participation, a drop that is independent of the effects of the strong labor market during this period. The estimates imply that TANF alone has accounted for roughly one-third of the reduction from 1996-98.

The strong labor market has made work opportunities relatively more attractive, drawing people off welfare and into jobs. In fact, the size of the caseload has become more sensitive to labor market changes in recent periods. However, the unemployment rate has not declined as much in the post-TANF period (1996-98) as it did in the 1993-96 waiver period. As a result, the share of the decline in the caseload that is attributable to improvements in the labor market was much larger in the 1993-96 period (roughly 26 to 36 percent) than in the 1996-98 period (8 to 10 percent).

While this study helps to explain the post-TANF changes in welfare participation, there is much about welfare participation that is unknown. In most models that were estimated, a large share of the variation over time could not be explained. The variation across states in welfare policy and management has increased as a result of TANF, and the research community will struggle to keep abreast of these changes. Merely documenting the changes, let alone understanding their effects on caseloads, work, self-sufficiency, child well-being and the like, is a major challenge.

Appendix A
Comparison with the 1997 CEA Study

A replication of the estimates reported in the 1997 CEA study is provided in Table A2. There are five reasons why the "old" estimates may differ from the "new" estimates:

1. different time periods of analysis
2. different variables included in the models
3. use of approval vs implementation date of waivers
4. use of calendar vs fiscal year data
5. use of population under 65 instead of all population in calculating participation rates.

All models in Table A2 analyze the 1976-1996 period and include the same explanatory variables. Comparison between the "old CEA" estimates and the estimates in Model I of Table A2 shows that the effects of waivers are larger when calendar year data is used instead of fiscal year data. This finding is not surprising because the caseload continued to decline at the end of 1996, and some of this decline is attributed to waivers in Model I.¹⁸ Table A2 also demonstrates that the effects of waivers is somewhat smaller when the implementation date (Model IV) is used instead of the approval date (Model II). Use of the population under 65 (Model IV) instead of the total population (Model III) in the denominator of the reciprocity rate alters the results very little.

Although the use of the implementation date instead of the approval date and a different population control does not alter our results substantially, two other choices do. First, we include a second lag of the unemployment rate in our models in the current study (Table 2). The effect of the second lag is quite large and precisely estimated. It turns out that the inclusion of the second lag explains an important difference in the reported results between the two studies. With only one lag in unemployment, the 1997 study found that unemployment could explain 45 percent of the change in

¹⁸Some of the effects of waivers in 1996 may be picking up the effects of PRWORA, or the heightened public awareness of reform prior to PRWORA (Moffitt, 1999). Re-estimating Model IV in Table A2 without 1996 data leads to a coefficient on the waiver dummy of -3.65 (t-statistic of 1.60).

participation from 1993-96. (See Table 3, column labeled (3), in the 1997 report.) Using the 1976-1998 data, and the full specification reported as Model 1 in Table 2 but without the second lag in unemployment, we find results that are almost identical to those reported in the 1997 study: unemployment explains 42 percent of the change between 1993 and 1996. But with the second lag included, the share explained by unemployment falls to 26 percent. Therefore, the specification of the lag structure does alter the results from the simulations. However, the effects of waivers change very little with the specification of the lag structure of unemployment: the share explained by waivers between 1993-96 based on Model 1 in Table 2 is approximately 15 percent with either one or two lags.

The studies also differ in their findings regarding the importance of waivers. However, the primary difference is not due to different estimates within the same specification, but in the choice of which specification to emphasize. The 1997 study emphasized results from a specification that included a lead value of the waiver variables (model 6 in Table 2 of the 1997 report) while the current study emphasizes models that exclude the leads (model 3 in Table 2 of the 1997 report). As described in the 1997 technical report, "... it may be that the waiver application process, the publicity surrounding it, and potential changes in case workers' behavior and attitudes may provide a signal to potential recipients that the environment in which the welfare system operates is about to change. It may lead some individuals contemplating applying for benefits to find other sources of income support, whether from work or elsewhere (p. 15)." While this is a plausible scenario, an alternative interpretation is that the leads are picking up unobserved differences across states or within states across time. For example, perhaps states with recently declining caseloads (or caseloads declining more -- or increasing less -- than expected) had slack resources and manpower to design and submit a waiver. For this reason, the current study uses the simple contemporaneous value for waivers and TANF.

Excluding the leads does not change the estimates of the effect of unemployment rates. However, the waiver effects are substantially smaller without the leads. As reported in Table 3 of the 1997 study, the share of the 1993-96 change explained by waivers falls from 31 percent if the leads are

included to 13 percent if the leads are not included. The 13 percent estimate in the 1997 study is comparable to the estimate of 14.6 percent in Table 3 of the current study.

Other than these differences, the updated study is quite consistent with the earlier report. Most importantly, strong labor markets, as measured by the unemployment rate, and welfare waivers played important roles in explaining the declines from 1993-96. The new study builds on the 1997 report and finds that TANF has had an even more profound effect on participation than did waivers.

Table A1. Dates of TANF Implementation and Major Welfare Waivers

	Date of First Major Waiver		TANF Implementation	
	Approval	Implementation	Official	Actual, if Different from Official
Alabama			November-96	
Alaska			July-97	
Arizona	May-95	November-95	October-96	
Arkansas	April-94	July-94	July-97	
California	October-92	December-92	November-96	January-98
Colorado			July-97	
Connecticut	August-94	January-96	October-96	
Delaware	May-95	October-95	March-97	
DC			March-97	
Florida	June-96		October-96	
Georgia	November-93	January-94	January-97	
Hawaii	June-94	February-97	July-97	
Idaho	August-96		July-97	
Illinois	November-93	November-93	July-97	
Indiana	December-94	May-95	October-96	
Iowa	August-93	October-93	January-97	
Kansas			October-96	
Kentucky			October-96	
Louisiana			January-97	
Maine	June-96		November-96	
Maryland	August-95	March-96	December-96	
Massachusetts	August-95	November-95	September-96	
Michigan	August-92	October-92	September-96	
Minnesota			July-97	
Mississippi	September-95	October-95	October-96	July-97
Missouri	April-95	June-95	December-96	
Montana	April-95	February-96	February-97	
Nebraska	February-95	October-95	December-96	
Nevada			December-96	
New Hampshire	June-96		October-96	
New Jersey	July-92	October-92	February-97	July-97
New Mexico			July-97	
New York			December-96	November-97
North Carolina	February-96	July-96	January-97	
North Dakota			July-97	
Ohio	March-96	July-96	October-96	
Oklahoma			October-96	
Oregon	July-92	February-93	October-96	
Pennsylvania			March-97	
Rhode Island			May-97	
South Carolina	May-96		October-96	
South Dakota	March-94	June-94	December-96	
Tennessee	July-96	September-96	October-96	
Texas	March-96	June-96	November-96	
Utah	October-92	January-93	October-96	
Vermont	April-93	July-94	September-96	
Virginia	July-95	July-95	February-97	
Washington	September-95	January-96	January-97	
West Virginia			January-97	
Wisconsin	June-94	January-96	September-96	September-97
Wyoming			January-97	

*New Mexico implemented its TANF program in July 1997. It was found unconstitutional in September 1997. A revised TANF program was implemented in April 1998.

Table A2.
 "Old CEA" Compared with "New CEA" for the 1976-1996 Period
 (Coefficient estimates multiplied by 100)

	Old CEA		New CEA							
	Beta	t-statistic	Model I		Model II		Model III		Model IV	
	Beta	t-statistic	Beta	t-statistic	Beta	t-statistic	Beta	t-statistic	Beta	t-statistic
Any waiver	-5.17	2.97	-6.74	3.33	-6.81	3.33	-5.66	2.67	-5.71	2.67
Unemployment										
Current	-0.90	2.09	-0.58	1.18	-0.63	1.28	-0.61	1.24	-0.66	1.33
Lagged	4.97	11.83	4.60	9.50	4.66	9.52	4.61	9.47	4.67	9.49
Log max. monthly benefit	7.93	1.65	6.57	1.02	5.75	0.88	7.06	1.09	6.23	0.96
Years	1976-1996		1976-1996		1976-1996		1976-1996		1976-1996	
Date of waivers	Approval		Approval		Approval		Implementation		Implementation	
Population	All		All		Under 65		All		Under 65	
Calendar vs fiscal	Fiscal		Calendar		Calendar		Calendar		Calendar	

All models include state effects, year effects, and state-specific time trends. "Old CEA" refers to the estimates for Model 3 in Table 2 of the 1997 CEA report. To be consistent with the 1997 CEA report, the waiver in West Virginia is assumed to be a "major" waiver.

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