

The Impacts of Welfare Reform on Recipients of Housing Assistance

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Abstract

This article uses data from randomized evaluations in Indiana and Delaware to address three questions: (1) Are welfare recipients who receive federal housing assistance less employable than recipients who do not? (2) How does the impact of welfare reform compare for families with and without housing assistance? (3) Does welfare reform increase or decrease the use of such assistance?

Although public housing residents may be more disadvantaged than welfare recipients who do not get housing assistance, voucher users and Section 8 project-based recipients were not. Welfare reform had similar impacts on the earnings and welfare benefits of families that received housing assistance and those that did not. Where impacts did differ, they were larger for families receiving assistance. Welfare reform also reduced the receipt of housing assistance. Families that receive assistance appear to have less financial strain than families that do not, suggesting that assistance may increase overall financial stability.

Keywords: Housing assistance programs; Social experiment; Welfare

Introduction

The substantial overlap in populations served by the welfare and housing programs means that these programs have the potential to strongly affect each other. Nationally, about 30 percent of families on welfare receive federal housing assistance from the U.S. Department of Housing and Urban Development (HUD). Conversely, about half of all HUD-assisted families with children received some income from welfare in 1996, the year federal welfare reform

was enacted, while about 27 percent did in 2000.¹ Any interactive effects of the two programs would have implications for how state welfare agencies and housing programs might target resources and provide a rationale for a more coordinated approach to welfare and housing assistance.

If welfare reform is more effective for families that get housing assistance than for those that do not, then policy makers may want to explore why this is the case and how to better integrate the programs to take advantage of potentially positive spillovers. Helping recipients become self-sufficient is a frequently mentioned goal of welfare reform, and it is important to know whether housing assistance does this. If welfare reform is less effective for families that also receive housing assistance, it is important to determine whether this is because of exogenous differences in client characteristics or because of adverse interactions between incentives in the two programs. In the latter case, policy changes may be needed to better align incentives.

Simple economic theory posits that welfare recipients who receive housing assistance should work fewer hours than other recipients for two reasons. First, housing assistance effectively increases income, either by reducing rent or by offering access to housing that would otherwise cost more.² The more income people have, the more leisure they demand, and the fewer hours they choose to work; thus, other things being equal, individuals who receive HUD assistance should work less than those who do not.

Second, because HUD rental subsidies decrease as income increases, housing assistance acts as a tax on earnings. An increase of \$1 in earnings reduces the housing subsidy by 30 cents—an implicit tax of 30 percent. This tax leads to a further decrease in the number of hours worked for any given level of wages.³ Welfare recipients with and without housing assistance can therefore be viewed as having two different labor supply curves. Consequently, economic theory predicts that, other things being equal, welfare recipients who get hous-

¹ The proportion of welfare recipients receiving housing assistance is based on 2001 HUD and U.S. Department of Health and Human Services data, as reported in Sard and Waller (2002). Figures for the proportion of HUD-assisted families that have children and receive welfare are from Khadduri, Shroder, and Steffen (2003).

² In Indiana and Delaware, housing assistance does not affect welfare benefits. Also, welfare benefits have the same effect on federal housing assistance as earnings. Specifically, welfare benefits are counted as income, and families that get housing assistance contribute 30 percent of their income toward rent.

³ Assuming that substitution effects dominate income effects so that the labor supply curve slopes upward, with gross wages on the vertical axis and hours worked on the horizontal axis, the income effect causes a parallel leftward shift of the labor supply curve, while the implicit tax causes a further (nonparallel) leftward shift of the curve. For brevity, the discussion in the text treats housing assistance as if it were the same as cash, a substantial oversimplification. See Shroder (2002) for further discussion and references.

ing assistance should have lower employment rates (at a given wage level) than their counterparts who do not.

However, economic theory is not clear about the impact of reform on employment for welfare recipients who get housing assistance compared with those who do not. In other words, when a state changes its welfare policies to increase employment and decrease time on welfare, theory does not predict clearly whether changes in employment and welfare use will be larger or smaller for recipients who also receive housing assistance compared with those who do not. For example, suppose welfare reform strengthens work incentives by allowing recipients to keep more of their benefits when they become employed (often referred to as an enhanced earnings disregard). At any given wage level, both welfare recipients who get HUD assistance and those who do not would choose to work more hours (because their net wage is higher).⁴ Although the implicit HUD tax will dampen the effect of a more generous earnings disregard for recipients with assistance, theory alone (without specific assumptions about the shapes of labor supply curves) does not predict which group will have a larger labor supply response because welfare recipients with and without housing assistance are on different supply curves.⁵

This article addresses three principal questions:

1. Do welfare recipients who receive federal housing assistance have greater barriers to employment than recipients who do not?
2. How does welfare reform affect the earnings and welfare benefits of recipients who get housing assistance, and are those impacts larger or smaller than they are for recipients who do not get such assistance?
3. Does welfare reform increase or decrease the use of housing assistance for welfare recipients who were getting it when the program began?

We address these questions using data from rigorous experimental welfare reform evaluations in Indiana and Delaware. Recipients in both states were randomly assigned to a treatment group that was subject to new welfare reform policies or a control group that was subject to traditional welfare rules.

⁴ The portion of the labor supply curves where earnings (gross wages multiplied by hours worked) are high enough to make recipients ineligible for welfare will not be affected by a change in the earnings disregard.

⁵ This discussion is based on a simple static labor supply model. Dynamic models of labor supply (for example, search theory) produce similar conclusions, although for different reasons. In a dynamic model, the income effect of housing leads to a higher reservation wage and lower job acceptance (employment) rates among assisted recipients. Welfare reform should lower the reservation wage, but might lower it more, less, or equally for recipients with and without housing assistance.

We compare impacts (the difference in average outcomes for the treatment and control groups) for welfare recipients with and without housing assistance. Our analysis shows the economic effects of welfare reform on families with and without housing assistance, but does not show the impacts of housing assistance alone, because sample members were not randomly assigned to the housing assistance group.

The Indiana sample followed two cohorts totaling 71,000 welfare families for up to five years. The Delaware sample followed over 3,500 families for 2 years. We matched these families to HUD administrative records to identify who received housing assistance and what type: public housing, vouchers, or Section 8 projects.⁶ Economic outcomes were measured using state administrative records.

All three types of assistance generally require tenants to contribute 30 percent of their adjusted income toward the cost of shelter, with the remaining cost borne by the federal government. Public housing projects are owned by state and local government entities; Section 8 projects are owned by private entities that have contracts with HUD to subsidize the tenancy of low-income households; vouchers subsidize low-income families in units of their own choosing.⁷

This article builds on previous research in a number of ways. First, it presents experimental impact estimates of welfare reform for housing assistance subgroups from two states, adding to existing findings from four other states (Connecticut, Georgia, Ohio, and Minnesota; see Miller et al. 2000, Riccio and Orenstein 2000, and Verma and Riccio 2003). Second, our study uses HUD administrative records to determine receipt of housing assistance, a more accurate source than the survey measures used in previous studies (with the recent exception of Verma and Riccio 2003). Third, our study uses longitudinal measures of assistance from HUD administrative records to present

⁶ In 1998, Congress combined the pre-existing voucher and certificate programs into a new voucher program. We assume in this article that the differences between the two old programs, and between the old programs and the new program, would not have significantly affected the employment and recipient patterns we are studying, and accordingly we refer to all tenant-based assistance as “vouchers.”

⁷ An anonymous reviewer pointed out that the forms of assistance could affect self-sufficiency outcomes, because public housing and Section 8 projects are fixed, while vouchers are portable. Finding and holding a job might be more difficult, for example, in a depressed neighborhood. The differential impact of program design on self-sufficiency is carefully assessed in Orr et al.’s interim evaluation of the Moving to Opportunity (MTO) experiment (2004), the only demonstration in which the form of assistance was randomly assigned. Four to seven years after random assignment in MTO, the differential impacts on earnings, employment, and welfare receipt have not been significant. In this study, we report separately on the impact of welfare reform on those who receive each type of assistance.

experimental estimates of the impact of welfare reform on length of time spent receiving housing assistance. Finally, the welfare reforms instituted in Indiana and Delaware are in some respects more typical of welfare reform in the United States than the interventions studied in earlier work.⁸

Here is a brief preview of our findings: Contrary to the simple economic theory noted earlier, welfare recipients who get HUD assistance do not have uniformly lower average levels of employment and earnings than those who do not. Overall, we find that welfare reform increased employment and earnings and decreased welfare receipt for Indiana and Delaware recipients with and without HUD assistance. For the most part, however, the impact did not differ between groups. An exception appears to lend support to the view that welfare recipients who get HUD assistance are particularly responsive to increases in the earnings disregard. Welfare reform also reduced the average length of stay in housing assistance, particularly in the short run.

The next section of this article reviews the literature on our three questions. The third section discusses the specific welfare reform policies in Indiana and Delaware during the follow-up period. The fourth explains the data and the estimation techniques we used, the fifth describes the results, and the sixth presents our conclusions.

Previous studies

This section summarizes the literature relevant to each of our three research questions.

Differences in barriers to employment between those who receive assistance and those who do not

Nationally about a quarter of renters with incomes below 50 percent of an area's median income (defined by HUD as "very low income") receive federal housing assistance, but the proportion varies substantially by region (Khadhuri, Shroder, and Steffen 2003). The local processes for rationing this scarce resource can lead to systematic differences between those who receive assistance and those who do not, often—but not always—favoring those with a longer history of deprivation. In statewide samples, central-city residents will be more likely to reside in public housing than rural households, while the use of vouchers by metropolitan and rural families depends on countervailing

⁸ Both Connecticut and Minnesota's programs had unusually generous earnings disregards. The Georgia and Ohio evaluations predate welfare reform and are evaluations of alternative employment and training approaches rather than comprehensive welfare reform programs.

forces: Voucher offices will be more accessible in metropolitan areas, but rural waiting lists are often shorter (Pistilli 2001).

Data from welfare reform experiments in four other states—Connecticut, Georgia, Minnesota, and Ohio—provide some not entirely consistent evidence that welfare recipients who get housing assistance are more likely to have characteristics associated with poor success in the labor market than those who do not (Riccio and Orenstein 2000; Verma and Riccio 2003). In general, the group that was receiving assistance was more likely to have lower levels of employment, to be long-term welfare recipients, to be black, and to have more children. However, in three of the four sites, the two groups did not differ in high school attainment.

Among those receiving assistance, the Georgia study found that public housing residents were more disadvantaged than Section 8 recipients, while the Ohio study found the reverse. The Connecticut and Minnesota analyses did not present baseline characteristics by type of assistance.

Nonexperimental studies also tend to show modestly greater barriers among those who receive assistance than among those who do not, although the barriers vary—see Bania, Coulton, and Leete 2003, Corcoran and Heflin 2003, Mancuso et al. 2003, Nagle 2003, and Verma and Hendra 2003. Underlying regional differences may be responsible for the inconsistency, since these studies cover Cuyahoga County, OH; a metropolitan area in Michigan; three suburban Northern California counties; the state of Massachusetts; and Los Angeles County, respectively.

Differences in the impact of welfare reform

Results from welfare reform experiments in four other states consistently show larger employment and earnings impacts for welfare recipients who have housing assistance than for their counterparts who do not. In the Connecticut Jobs First program, earnings impacts were more than twice as large for sample members who received assistance as for those who did not, while in the Minnesota Family Investment Program, nearly all of the substantial earnings gains were attributable to families receiving assistance. The earnings impact for unassisted families was small and not statistically significant (Verma and Riccio 2003).

Riccio and Orenstein (2000) report on results from two sites for the National Evaluation of Welfare-to-Work Strategies. In Atlanta, they found larger impacts on employment and earnings for families living in public housing for both labor force attachment programs and human capital development programs. In Columbus, OH, they found statistically significant earnings gains

only for the subgroup of welfare recipients living in public housing. Estimated earnings impacts were close to zero and not statistically significant for welfare recipients in both Section 8 and unsubsidized private housing.

Welfare receipt and payment reductions were larger for families that were receiving HUD assistance than for their unassisted counterparts in the Georgia and Ohio sites, but no welfare payment impacts were found for families receiving assistance in Connecticut or Minnesota. For these two sites, however, impacts on combined income from earnings and welfare payments were positive and larger for families receiving HUD assistance than for their unassisted counterparts.

Impacts of welfare reform on tenure in assisted housing

A successful welfare reform might boost recipients' earnings enough for them to leave housing assistance early, while an unsuccessful one might cut off cash assistance without raising earnings and make recipients retain housing assistance longer. Given the potential effects of welfare reform on housing assistance and uncertainty about their direction, it is surprising that almost no rigorous research has addressed this question. The sole exception is Verma and Riccio's recent analysis of welfare reform data in Connecticut and Minnesota (2003). Verma and Riccio (2003) also use HUD administrative data to measure the receipt of housing assistance over the follow-up period. They found no evidence that welfare reform affected housing assistance, except for a temporary reduction in public housing receipt during follow-up year 3.

Welfare reform experiments in Indiana and Delaware

Indiana and Delaware were two of many states granted waivers by the U.S. Department of Health and Human Services to adopt welfare policy changes in the 1990s. As a condition of the waivers, the department required states to conduct third-party random-assignment evaluations of the changes. Typically, a state selected certain counties or local offices to participate in the waiver demonstration program. Indiana's demonstration was an exception in that it applied statewide, while Delaware's welfare reform was initially implemented in 5 of the state's 13 welfare offices. All families receiving welfare in a state's demonstration counties during the first year (or longer) were randomly assigned to be subject to the new welfare reform policies (the treatment group) or to traditional Aid to Families with Dependent Children (AFDC) policies (the control group). Families typically retained their treatment or control status for several years.

The most important change brought about by welfare reform in Indiana and Delaware, as in most states, was a strengthening of work requirements, accompanied by tougher sanctions for noncompliance. The other key policies, in terms of the potential to affect recipients' behavior, were earnings disregards and time limits. The following section summarizes these policies in each state as they applied to the treatment and control groups.

Indiana

Work requirements and sanctions. Indiana required most adult welfare recipients in the treatment group to participate in work activities.⁹ Most clients met the requirement by working. Those who did not find work were placed in job-search activities. Sanctions for noncompliance reduced the grant by the adult portion (\$90 per month) for 2 months for the first violation, 12 months for the second, and 36 months for the third. Control group members were given a lower priority for referral and consequently had lower participation rates in job-search and other work activities. Control group members were not subject to sanctions for noncompliance.

Time limits. Indiana imposed a 24-month limit on welfare receipt for adults required to participate in work activities. However, the limit affected only the adult portion of a grant; children remained eligible for assistance after a parent exceeded the limit. When the limit was reached, the adult portion of the grant was eliminated for 36 months. In 1997, two years after welfare reform began in Indiana, adults who reached the 24-month limit became ineligible for assistance for the rest of their lives. Clients in the control group were not subject to any time limit.

Earnings disregard. For the first five years after welfare reform, Indiana retained the traditional AFDC earnings disregard, under which each additional dollar of earnings reduced AFDC benefits by the same amount after a small work expense allowance.¹⁰ This disregard applied to both the treatment and

⁹ Like many states, Indiana and Delaware enacted welfare reform before federal legislation in the form of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA) took effect. PRWORA did not substantially change Indiana's and Delaware's programs, because the policy changes tested in these demonstrations were generally consistent with this federal law. PRWORA also allowed states to continue, for several years, welfare reform policies that were inconsistent with the act if they were part of such demonstrations.

¹⁰ For the first four months of employment, the traditional AFDC disregard ignored the first \$120 in monthly earnings and one-third of additional earnings in calculating the benefit amount. For the next eight months, a flat \$120 in monthly earnings was disregarded. After a year, the disregard was reduced to \$90 per month.

the control groups. Starting in July 2000, the state introduced a more generous earnings disregard that applied only to the treatment group. Under that policy, 100 percent of earnings were disregarded until a recipient reached the federal poverty level. The expanded disregard was designed to strengthen incentives to work and enable families to increase their incomes by working.

The early Indiana cohort effectively experienced only the traditional disregard, because just a small proportion of those families were still receiving Temporary Aid to Needy Families (TANF) in July 2000. In the later cohort, however, treatment group members still on TANF in July 2000 (approximately half the group) became subject to the expanded disregard two to three years after random assignment, depending on when they were assigned. The disregard for the control group did not change.

The treatment group in the later cohort, therefore, had a much greater reward for working than either the control group or the treatment group in the earlier cohort.

Delaware

Work requirements and sanctions. Delaware's A Better Chance (ABC) welfare reform program initially required that only adults deemed employable work. Clients under age 25 with low basic skills were instead referred to basic skills training. Starting in January 1997, however, work or job search became the primary required activity for all TANF recipients.

ABC had a relatively aggressive sanction policy for noncompliance and a high sanction rate in the treatment group. Sanctions were progressive and could lead to case closure (termination of benefits). Within the first 18 months of random assignment, approximately half of all adults in the treatment group had been sanctioned. Control group members were not subject to sanctions.

Time limits. In Delaware, families headed by an employable adult were eligible for cash assistance for only 24 months but could qualify for up to 24 additional months of benefits if they worked or participated in ABC's work experience program. After 48 months, families were ineligible for cash assistance for 96 months. Clients in the control group were not subject to a time limit.

Earnings disregards. Delaware also retained the traditional AFDC earnings disregard. However, a "fill-the-gap" budget policy allowed families in the treatment group to keep additional income up to 75 percent of the federal poverty line. This policy does not seem to have been communicated very effectively. Just 33 percent of treatment group members knew that they were allowed to

keep more earnings; by comparison, 84 percent knew about their time limits (Fein and Karweit 1997).

Although control group policies in Indiana and Delaware were consistent throughout our observation period, these states made a few changes to policies for treatment group members (as noted earlier). Generally, the changes strengthened incentives to work. A substantial proportion of the treatment group in the Delaware sample and the early Indiana cohort experienced only the initial policy environment because they left TANF before policies changed. The treatment group in the later Indiana cohort experienced stronger work incentives than the early one; after controlling for differences in characteristics between the two cohorts, this might be expected to lead to larger impacts.

Overall, the mainstream nature of Indiana and Delaware's policies suggests that the results in this article may be relevant to a large proportion of state welfare reform programs.

Methodology

This section describes our methodology, including samples and data sources and the approach to estimating impacts.

Samples

We analyzed three samples of welfare recipients, two cohorts from Indiana and one from Delaware. Table 1 shows sample sizes for each of the cohorts by housing status at baseline and treatment or control status.

Early Indiana cohort. This includes all families that received welfare at some point during the first year of Indiana's welfare reform program, from May 1995 through April 1996 (excluding "child-only" families that had no adult subject to work requirements).¹¹ The sample comprises 66,440 families, 95 percent (63,223) in the treatment group and 5 percent (3,217) in the control group.¹² According to HUD administrative data, 19 percent of families in the early cohort had housing assistance at baseline: About 5 percent lived in public housing (3,394 families), 5 percent received vouchers (3,478 families), and

¹¹ "Child only" refers to welfare cases with no eligible adult. This situation could arise if adults become ineligible because of sanctions or if children live with family members other than parents, such as grandparents. Over the past decade, child-only cases have made up an increasing share of the welfare caseload nationally.

¹² Although control group sample sizes are small by design, the difference between the means for the treatment and control groups is still an unbiased estimator of the program effect. The drawback of smaller or unbalanced sample sizes is that the standard errors of the impact estimates are larger than they would be if the same sample were more equally balanced.

Table 1. Sample Sizes of the Cohorts by Housing Status at Baseline and Treatment or Control Group

Cohort	Public Housing	Vouchers	Section 8 Projects	Unsubsidized Housing	Total
Early Indiana					
Treatment group	3,207	3,302	5,525	51,189	63,223
Control group	187	176	294	2,560	3,217
Later Indiana					
Treatment group	185	264	310	3,104	3,863
Control group	50	71	102	868	1,091
Delaware					
Treatment group	130	218	211	1,490	2,049
Control group	114	164	165	1,320	1,763

Note: The enrollment dates for the three samples are from May 1995 to April 1996 for the early Indiana cohort, from March 1998 to February 1999 for the later Indiana cohort, and from October 1995 to September 1996 for the Delaware cohort.

9 percent lived in Section 8 projects (5,819 families). The remaining 81 percent of the early Indiana cohort (53,749 families) lived in unsubsidized private housing at baseline. Five years of follow-up data are available for this cohort.

Later Indiana cohort. The cohort, which comprises 4,954 families in 12 Indiana counties, was randomly assigned between March 1998 and February 1999. (Indiana ended statewide random assignment in March 1998. Thereafter, random assignment continued for new welfare entrants in 12 selected counties, rather than in all 92.) In the later cohort, approximately 80 percent of families (3,863) were assigned to the treatment group and 20 percent (1,091) to the control group. As described earlier, treatment group members in the later cohort experienced a somewhat different set of welfare reform policies than their counterparts in the early cohort (primarily a time limit applied to a larger proportion of treatment group members and, late in the follow-up period, an increased earnings disregard). Some 20 percent of welfare families in the later Indiana cohort received housing assistance at baseline: 5 percent lived in public housing (235 families), 7 percent received vouchers (335 families), and 8 percent lived in Section 8 projects (412 families). Two years of follow-up data are available for this cohort.

Delaware cohort. The Delaware sample consists of 3,812 families randomly assigned to the treatment group (2,049 families) or the control group (1,763

families) during the first year of ABC—October 1995 through September 1996. Delaware initially operated ABC on a demonstration basis in five local AFDC offices and ended random assignment of clients in March 1997, at which point all new applicants in the five pilot offices were enrolled in ABC at application, and control group members still on the rolls became subject to welfare reform policies during their next regularly scheduled office visit. According to HUD administrative data, 26 percent of families in the Delaware sample were receiving housing assistance at baseline: 6 percent lived in public housing (244 families), 10 percent received vouchers (382 families), and 10 percent lived in Section 8 projects (376 families). Two years of follow-up data are available for this sample.

Data sources

The analysis is based on a large volume of administrative records and detailed survey data. Two HUD administrative databases provided information on receipt of housing assistance. Welfare outcomes and baseline demographics were measured by means of administrative records from the welfare eligibility systems in Indiana and Delaware. Employment and earnings data come from quarterly earnings reports to the states' unemployment insurance systems.

Client follow-up surveys administered in each state provided data for other outcomes: neighborhood problems and indicators of financial strain. Both surveys yielded response rates of 70 percent. Appendix A provides additional detail on the data sources used, and appendix B describes how HUD data were matched to the evaluation sample and how assistance was measured.

Approach to estimating impact

The impacts presented in this article are the difference in average outcomes between members of the treatment and control groups. Outcomes for control group members represent what would have happened in the absence of the program. Because random assignment ensures that the treatment and control groups, on average, are alike in all respects other than exposure to the program, any significant differences in outcomes can be attributed to it.

The impact analysis focuses on subgroups defined according to receipt of housing assistance at baseline: public housing, vouchers, Section 8 projects, and no housing assistance. Because the subgroups were created based on housing status before random assignment, the impact estimates are free of the selection bias that is always possible in nonexperimental studies. The impacts presented in the next section are the difference in average outcomes between treatment and control group members in each subgroup.

Although the experimental design ensures that simple differences in means are unbiased estimates of program impact, we follow the conventional approach of adjusting the impact estimates to account for random differences in baseline characteristics between groups. We used ordinary least squares regressions, where the independent variable of interest was an indicator of treatment or control status (1 = treatment, 0 = control), and we controlled for the following additional characteristics at baseline: age, race or ethnicity, urbanicity, marital status, and earnings history. The only purpose of the regression adjustment is to make the impact estimates slightly more precise.

The larger sample size for the early Indiana cohort means that the same size impact is more likely to be statistically significant compared with the other two. We give additional weight, therefore, to the consistency of sign and size of impact estimates, not just their statistical significance.

Findings

This section presents the expected results and actual findings for each of our three questions.

Do welfare recipients who receive federally funded housing assistance have greater barriers to employment than recipients who do not?

Addressing this question involves comparing baseline characteristics to determine whether welfare families that receive assistance are more disadvantaged. One reason why the two groups might differ is that the waiting period for housing assistance in many areas is several years. Families that remain eligible for assistance for that long may be more likely to be disadvantaged than other welfare families.

Understanding how recipients differ on baseline characteristics provides a context for the impact results we present. For example, other research has shown that the impacts of welfare reform are sometimes larger for more disadvantaged families.¹³ Therefore, if welfare families with housing assistance in Indiana and Delaware were more disadvantaged than other welfare recipients, they might be expected to have experienced larger gains in employment and larger reductions in welfare receipt than unassisted families.

¹³ Analyses presented in the five-year report on Indiana's welfare reform program, for example, show the largest impacts for clients with no recent work history as of random assignment (Beecroft et al. 2003). For an extensive examination of subgroup impacts of welfare reform, see Michalopoulos and Schwartz (2001).

In addition, knowing whether and how assisted families differ from other welfare recipients could help policy makers coordinate housing assistance programs with the welfare-to-work efforts of welfare agencies and state departments of labor. If welfare recipients with housing assistance are more disadvantaged, agencies may want to target resources or particular services to them (especially if impacts are larger for this group).

On the baseline measures most closely related to employment, welfare recipients who lived in public housing were more disadvantaged than recipients who did not get assistance. In the early Indiana cohort, public housing residents were employed in fewer quarters before random assignment, had lower average earnings, and were more likely to be long-term welfare recipients (table 2, top panel, first column). In Delaware, public housing residents also used welfare more than recipients who did not get HUD assistance (table 2, bottom panel).¹⁴ For the later Indiana cohort, public housing residents and adults who did not receive assistance did not differ in baseline measures of employment, but that may be partly due to smaller sample sizes, because the difference in average earnings was nearly as large as for the early cohort (table 2, middle panel). Across the three cohorts, therefore, public housing residents were significantly more disadvantaged on three employment-related measures. On the other baseline measures shown in table 2, public housing residents were generally more disadvantaged than unassisted welfare recipients.

Unlike public housing residents, recipients of other forms of HUD assistance—voucher users and project-based Section 8 recipients—did not consistently have greater barriers to employment than unassisted welfare recipients. The relative employability of voucher users differed in the two states. Voucher users in both Indiana cohorts were more likely to have completed high school and had higher rates of baseline employment than those in unsubsidized housing (table 2, second column). Voucher users in Delaware, however, were less likely to have a high school diploma and were more reliant on welfare than unassisted sample members. For Section 8 project-based tenants, there was no clear pattern of baseline differences compared with families in unsubsidized housing (table 2, third column).

Across all three cohorts and types of housing assistance, the most consistent difference was that families receiving housing assistance were more likely than other families to be nonwhite. In Indiana, adults in assisted families were also less likely than adults in unassisted families to be married. (Data on mari-

¹⁴ Although the available baseline characteristics differ somewhat by study, the proportion of welfare recipients in ongoing cases was often used in waiver experiments as a proxy for long-term welfare receipt.

Table 2. Selected Characteristics of the Cohorts by Housing Status at Baseline

Cohort	Public Housing	Vouchers	Section 8 Projects	Unsubsidized Housing
Early Indiana				
Proportion with a high school diploma	57.5%	64.1%***	63.2%***	57.3%
Proportion nonwhite	63.0%***	39.0%	54.2%***	40.3%
Number of quarters employed (out of 5) before enrollment	1.7***	2.0***	2.1***	1.9
Average quarterly earnings for 5 quarters before enrollment	\$608***	\$749	\$725	\$735
Proportion married	5.1%***	8.4%	4.4%***	8.8%
Family size	3.2***	3.0***	2.7***	2.8
Age of the youngest child	4.9	5.7***	4.1***	4.8
Proportion on welfare at random assignment	65.4%**	62.6%	69.7%***	63.3%
Later Indiana				
Proportion with a high school diploma	52.3%	63.6%***	52.7%	55.4%
Proportion nonwhite	63.0%***	60.6%***	61.2%***	43.3%
Number of quarters employed (out of 5) before enrollment	1.8	2.1**	2.1***	1.8
Average quarterly earnings for 5 quarters before enrollment	\$621	\$799	\$629*	\$714
Proportion married	5.5%**	3.9%***	2.9%***	8.9%
Family size	2.7	2.8	2.4***	2.7
Age of the youngest child	3.4**	5.1***	2.5***	4.0
Delaware				
Proportion with a high school diploma	51.7%	47.8%*	55.6%	53.4%
Proportion nonwhite	87.3%***	79.1%***	73.4%***	55.6%
Age of the youngest child	4.9	5.7***	3.9***	4.5
Proportion with 36 to 60 months of welfare out of the previous 5 years	60.6%***	67.5%***	53.3%***	34.5%
Number of children	2.7***	2.6***	2.2	2.1

Source: Administrative records are from the Indiana Client Eligibility System, Indiana's unemployment insurance records, and the Delaware Client Information System. Housing assistance data are from HUD.

* $p < 0.1$. ** $p < 0.05$. *** $p < 0.01$. P values indicate that the means differ significantly from those of welfare recipients in unsubsidized private housing.

tal status were not available for Delaware.) In both states, public housing residents and voucher users tended to have larger families than those who were not receiving assistance. Assisted families also had higher rates of welfare and food stamp receipt (not shown in the table) than other families. These results are consistent with previous research.

In addition to these baseline measures, survey data were available for the early Indiana cohort and for the Delaware sample and reveal interesting differences across subgroups.¹⁵ While welfare recipients in public housing lived in more distressed neighborhoods than other welfare recipients (not shown), voucher users did not live in worse neighborhoods than welfare recipients in unsubsidized housing. The finding that voucher users lived in better neighborhoods than public housing residents is consistent with the design of the program, which gives recipients more choice about where to live.

In general, recipients getting assistance—both voucher users and public housing residents—faced less financial strain than their counterparts in unsubsidized housing.¹⁶ For example, assisted families were less likely to put off seeing a doctor or dentist because money was lacking, were more likely to pay their rent in full, and were less likely to move (not shown). These results suggest that housing assistance may increase financial stability for welfare recipients.

In summary, the analysis reveals some heterogeneity by type of housing assistance. Public housing residents may be somewhat more disadvantaged than welfare recipients who do not get assistance, but voucher users and Section 8 project-based recipients were not clearly more disadvantaged. Together with previous research, the results also suggest that disadvantage can vary by place. Overall, the evidence does not suggest that welfare recipients who get HUD assistance are consistently much less employable than other recipients. Our analysis also suggests that housing assistance reduces financial strain for households.

How does welfare reform affect the earnings and welfare benefits of recipients who get housing assistance, and are those impacts larger or smaller than they are for recipients who do not get such assistance?

Addressing this question involves comparing impacts for subgroups of welfare recipients defined by type of housing assistance at the time of random assignment (public housing, vouchers, Section 8 projects, unsubsidized housing). Most random assignment studies have found that state welfare reform policies increased low-wage employment, decreased clients' time on welfare,

¹⁵ Unlike the analysis of baseline characteristics presented earlier, this analysis defines housing subgroups using administrative data from 2000 to capture housing status at the time the surveys were conducted. For survey measures, housing status at the time of the survey is preferable to housing status at baseline because family status could have changed.

¹⁶ For this specific analysis, it was not possible to identify families in project-based Section 8 housing. Consequently, these families are included in the unsubsidized housing group, although baseline data suggest that this group is only about one-tenth the size of the unsubsidized housing group.

and had little or no effect on family income because the decreases in welfare payments offset the increases in earnings. Very few studies, however, have estimated the impacts on these same economic outcomes separately for welfare recipients who receive federal housing assistance.

As noted earlier, if welfare reform is more effective for clients who have housing assistance than for clients who do not, then policy makers may want to better integrate the programs to take advantage of the positive interaction between them. If welfare reform is less effective for clients who receive housing assistance, it is important for policy makers to determine whether the incentives for the two programs interact adversely.

In both Indiana and Delaware, welfare reform increased employment and earnings and decreased TANF and food stamp payments for all housing assistance subgroups. On average across the three samples (both Indiana cohorts and the Delaware sample), welfare reform increased employment by about 9 percent and earnings by about 12 percent for the subgroups with housing assistance. Similarly, welfare reform decreased TANF payments and food stamp payments over the follow-up period by an average of 17 percent and 4 percent, respectively. In general, the positive impact on earnings was mostly offset by the negative impacts on TANF and food stamp payments, resulting in no impact on income.

Tables 3 through 9 show impacts on employment, earnings, TANF payments, and food stamp payments by follow-up year. Tables 3 through 6 present impacts for the early Indiana cohort, tables 7 and 8 for the later Indiana cohort, and table 9 for the Delaware cohort. Although many of the yearly impact estimates are not statistically significant, the figures show generally consistent patterns over time. The large size of the unsubsidized housing subgroup in the early Indiana cohort makes it easier to detect statistically significant impacts than in the other subgroups and samples.

For the most part, impacts on employment and public assistance were not statistically different for welfare recipients with housing assistance compared with their counterparts in private, unsubsidized housing, with the following exceptions. In the later Indiana cohort, the subgroup that got housing assistance had larger gains in employment and earnings than the subgroup that did not. In addition, TANF reductions in Delaware were larger for families that got assistance than for those that did not.

In summary, for recipients of housing assistance, reform increased earnings and employment and decreased the use of welfare. Unlike the findings from previous welfare reform experiments, impact estimates did not differ in size for the most part between families that received assistance and those that did not. Where impacts did differ, however, they were larger for assisted families, a finding that is consistent with previous research.

Table 3. Impacts on Employment for the Early Indiana Cohort

Employment (%)	Welfare Reform Group	Traditional Welfare Group	Difference	Percent Change
Last quarter of year 1				
Public housing	47.5	47.4	0.1	0.2
Vouchers	51.3	47.2	4.1	8.7
Section 8 projects	52.8	50.3	2.5	5.0
Unsubsidized housing	46.8	44.2	2.6***	5.9
Last quarter of year 2				
Public housing	52.6	53.0	-0.4	-0.8
Vouchers	55.7	50.3	5.4	10.7
Section 8 projects	59.1	61.0	-1.9	-3.1
Unsubsidized housing	51.4	48.0	3.4***	7.1
Last quarter of year 3				
Public housing	56.4	53.0	3.4	6.4
Vouchers	59.1	56.8	2.3	4.1
Section 8 projects	62.2	62.2	0	0
Unsubsidized housing	53.7	49.8	3.9***	7.9
Last quarter of year 4				
Public housing	55.1	55.0	0.1	0.2
Vouchers	60.7	55.5	5.2	9.4
Section 8 projects	62.3	60.1	2.2	3.7
Unsubsidized housing	54.3	50.5	3.8***	7.6
Last quarter of year 5				
Public housing	56.3	50.4	5.9	11.7
Vouchers	58.6	54.7	3.9	7.2
Section 8 projects	60.9	57.7	3.2	5.5
Unsubsidized housing	53.5	50.0	3.5***	7.0
Ever employed, years 1 through 5				
Public housing	88.3	87.4	0.9	1.0
Vouchers	90.5	90.2	0.3	0.4
Section 8 projects	92.4	90.3	2.1	2.3
Unsubsidized housing	87.9	86.0	1.9***	2.2

Source: Employment data are from Indiana's unemployment insurance wage records; housing assistance data are from HUD.

Note: Sample sizes for the subgroups are as follows: public housing, $n = 3,394$; vouchers, $n = 3,478$; Section 8 projects, $n = 5,819$; and unsubsidized housing, $n = 53,749$. F tests were used to test the null hypothesis of equal impacts for all subgroups. The null hypothesis was not rejected for any of the outcomes in the table.

* $p < 0.1$ ** $p < 0.05$. *** $p < 0.01$. P values indicate that the means differ significantly for the two groups.

Table 4. Impacts on Average Earnings for the Early Indiana Cohort

	Average Earnings for the Welfare Reform Group (\$)	Average Earnings for the Traditional Welfare Group (\$)	Difference (\$)	Percent Change
Year 1				
Public housing	2,454	2,486	-32	-1.3
Vouchers	2,971	2,658	313	11.8
Section 8 projects	3,110	2,798	312	11.2
Unsubsidized housing	2,871	2,637	234***	8.9
Year 2				
Public housing	3,994	4,046	-52	-1.3
Vouchers	4,626	3,920	706	18.0
Section 8 projects	4,800	4,219	581**	13.8
Unsubsidized housing	4,248	3,902	346***	8.9
Year 3				
Public housing	5,069	4,544	525	11.6
Vouchers	5,735	5,324	411	7.7
Section 8 projects	6,179	5,859	320	5.5
Unsubsidized housing	5,260	4,829	431***	8.9
Year 4				
Public housing	5,804	5,120	684	13.4
Vouchers	6,672	5,822	850	14.6
Section 8 projects	7,144	6,385	759*	11.9
Unsubsidized housing	6,038	5,625	413***	7.3
Year 5				
Public housing	6,622	5,541	1,081*	19.5
Vouchers	7,524	7,312	212	2.9
Section 8 projects	8,017	7,343	674	9.2
Unsubsidized housing	6,758	6,203	555***	8.9
Total, years 1 through 5				
Public housing	23,985	21,776	2,209	10.1
Vouchers	27,651	25,102	2,549	10.2
Section 8 projects	29,304	26,664	2,640**	9.9
Unsubsidized housing	25,265	23,262	2,003***	8.6

Source: Earnings data are from Indiana's unemployment insurance wage records; housing assistance data are from HUD.

Note: Sample sizes for the subgroups are as follows: public housing, $n = 3,394$; vouchers, $n = 3,478$; Section 8 projects, $n = 5,819$; and unsubsidized housing, $n = 53,749$. F tests were used to test the null hypothesis of equal impacts for all subgroups. The null hypothesis was not rejected for any of the outcomes in the table.

* $p < 0.1$. ** $p < 0.05$. *** $p < 0.01$. P values indicate that the means differ significantly for the two groups.

Table 5. Impacts on Average TANF Payments for the Early Indiana Cohort

	Average TANF Payments for the Welfare Reform Group (\$)	Average TANF Payments for the Traditional Welfare Group (\$)	Difference (\$)	Percent Change
Year 1				
Public housing	2,298	2,563	-265***	-10.4
Vouchers	2,030	2,201	-171*	-7.8
Section 8 projects	2,041	2,088	-47	-2.2
Unsubsidized housing	1,886	1,977	-91***	-4.6
Year 2				
Public housing	1,428	1,574	-146	-9.3
Vouchers	1,118	1,472	-354***	-24.0
Section 8 projects	1,210	1,398	-188**	-13.4
Unsubsidized housing	1,042	1,186	-144***	-12.1
Year 3				
Public housing	1,040	1,235	-195*	-15.8
Vouchers	704	1,011	-307***	-30.4
Section 8 projects	834	1,044	-210**	-20.1
Unsubsidized housing	691	891	-200***	-22.4
Year 4				
Public housing	763	978	-215*	-22.0
Vouchers	480	772	-292***	-37.8
Section 8 projects	594	901	-307***	-34.1
Unsubsidized housing	490	754	-264***	-34.9
Year 5				
Public housing	622	869	-247**	-28.4
Vouchers	365	586	-221**	-37.7
Section 8 projects	467	825	-58***	-43.4
Unsubsidized housing	394	677	-283***	-41.8
Total, years 1 through 5				
Public housing	6,150	7,220	-1,070***	-14.8
Vouchers	4,697	6,043	-1,346***	-22.3
Section 8 projects	5,146	6,255	-1,109***	-17.7
Unsubsidized housing	4,504	5,484	-980***	-17.9

Source: Administrative records are from the Indiana Client Eligibility System; housing assistance data are from HUD.

Note: Sample sizes for the subgroups are as follows: public housing, $n = 3,394$; vouchers, $n = 3,478$; Section 8 projects, $n = 5,819$; and unsubsidized housing, $n = 53,749$. F tests were used to test the null hypothesis of equal impacts for all subgroups. The null hypothesis was not rejected for any of the outcomes in the table.

* $p < 0.1$. ** $p < 0.05$. *** $p < 0.01$. P values indicate that the means differ significantly for the two groups.

Table 6. Impacts on Average Food Stamp Payments for the Early Indiana Cohort

	Average Food Stamp Payments for the Welfare Reform Group (\$)	Average Food Stamp Payments for the Traditional Welfare Group (\$)	Difference (\$)	Percent Change
Year 1				
Public housing	2,755	2,932	-177**	-6.0
Vouchers	2,520	2,594	-74	-2.9
Section 8 projects	2,364	2,435	-71	-2.9
Unsubsidized housing	2,217	2,269	-52**	-2.3
Year 2				
Public housing	2,287	2,401	-116	-4.8
Vouchers	1,918	2,199	-281**	-12.8
Section 8 projects	1,934	2,061	-127	-6.2
Unsubsidized housing	1,627	1,717	-90***	-5.3
Year 3				
Public housing	1,917	1,950	-33	-1.7
Vouchers	1,517	1,725	-208*	-12.0
Section 8 projects	1,592	1,644	-52	-3.2
Unsubsidized housing	1,293	1,380	-87***	-6.3
Year 4				
Public housing	1,654	1,646	8	0.5
Vouchers	1,245	1,323	-78	-5.9
Section 8 projects	1,361	1,345	16	1.2
Unsubsidized housing	1,086	1,162	-76**	-6.5
Year 5				
Public housing	1,556	1,516	40	2.6
Vouchers	1,120	1,172	-52	-4.5
Section 8 projects	1,268	1,355	-87	-6.4
Unsubsidized housing	1,005	1,102	-97***	-8.8
Total, years 1 through 5				
Public housing	10,168	10,445	-277	-2.7
Vouchers	8,319	9,013	-694	-7.7
Section 8 projects	8,520	8,840	-320	-3.6
Unsubsidized housing	7,229	7,630	-401***	-5.3

Source: Administrative records are from the Indiana Client Eligibility System; housing assistance data are from HUD.

Note: Sample sizes for the subgroups are as follows: public housing, $n = 3,394$; vouchers, $n = 3,478$; Section 8 projects, $n = 5,819$; and unsubsidized housing, $n = 53,749$. F tests were used to test the null hypothesis of equal impacts for all subgroups. The null hypothesis was not rejected for any of the outcomes in the table.

* $p < 0.1$. ** $p < 0.05$. *** $p < 0.01$. P values indicate that the means differ significantly for the two groups.

Table 7. Impacts on Average Earnings and Employment for the Later Indiana Cohort

	Welfare Reform Group	Traditional Welfare Group	Difference	Percent Change
Average earnings (\$)				
Year 1				
Assisted housing	4,256	3,692	564*	15.3
Unsubsidized housing	4,770	4,642	128	2.8
Year 2				
Assisted housing	6,489	5,620	869	15.5
Unsubsidized housing	6,788	7,110	-322	-4.5
Average total earnings, years 1 and 2				
Assisted housing	10,777	9,316	1,461*	15.7
Unsubsidized housing	11,593	11,795	-202	-1.7
Employment (%)				
Last quarter of year 1				
Assisted housing	65.7	58.3	7.4**	12.8
Unsubsidized housing	58.6	57.5	1.1	1.9
Last quarter of year 2				
Assisted housing	62.2	55.7	6.5*	11.7
Unsubsidized housing	55.1	56.9	-1.8	-3.2
Ever employed, years 1 and 2				
Assisted housing	89.1	88.6	0.5	0.6
Unsubsidized housing	84.3	81.3	3.0**	3.6

Source: Earnings and employment data are from Indiana's unemployment insurance wage records; housing assistance data are from HUD.

Note: Sample sizes for the subgroups are as follows: assisted housing, n = 982, and unsubsidized housing, n = 3,972. Shaded cells indicate where the *F* test rejected the null hypothesis of equal subgroup impacts.

* $p < 0.1$. ** $p < 0.05$. *** $p < 0.01$. *P* values indicate that the means differ significantly for the two groups.

Table 8. Impacts on Average TANF Payments and TANF Receipt for the Later Indiana Cohort

	Welfare Reform Group	Traditional Welfare Group	Difference	Percent Change
Average TANF payments (\$)				
Year 1				
Assisted housing	1,698	1,978	-280***	-14.1
Unsubsidized housing	1,412	1,638	-226***	-13.8
Year 2				
Assisted housing	1,043	1,303	-260***	-19.9
Unsubsidized housing	712	902	-190***	-21.1
Average total payments, years 1 and 2				
Assisted housing	2,741	3,281	-540***	-16.4
Unsubsidized housing	2,123	2,540	-417***	-16.4
Average food stamp payments (\$)				
Year 1				
Assisted housing	2,290	2,278	12	0.5
Unsubsidized housing	1,811	1,762	49	2.8
Year 2				
Assisted housing	1,853	2,006	-153	-7.7
Unsubsidized housing	1,241	1,310	-69	-5.3
Average total payments, years 1 and 2				
Assisted housing	4,143	4,284	-141	-3.3
Unsubsidized housing	3,052	3,071	-19	-0.6

Source: Administrative records are from the Indiana Client Eligibility System; housing assistance data are from HUD.

Note: Sample sizes for the subgroups are as follows: assisted housing, $n = 982$, and unsubsidized housing, $n = 3,972$. F tests were used to test the null hypothesis of equal impacts for all subgroups. The null hypothesis was not rejected for any of the outcomes in the table.

* $p < 0.1$. ** $p < 0.05$. *** $p < 0.01$. P values indicate that the means differ significantly for the two groups.

Table 9. Impacts on Average Earnings, Employment, and TANF Payments for the Delaware Cohort

	Welfare Reform Group	Traditional Welfare Group	Difference	Percent Change
Average earnings (\$)				
Year 1				
Assisted housing	2,744	2,195	548***	25.0
Unsubsidized housing	2,690	2,419	271**	11.2
Year 2				
Assisted housing	4,069	4,026	43	1.1
Unsubsidized housing	4,076	4,029	47	1.2
Average total earnings, years 1 and 2				
Assisted housing	6,813	6,222	591	9.5
Unsubsidized housing	6,766	6,448	318	4.9
Employment (%)				
Last quarter of year 1				
Assisted housing	54.1	43.9	10.2***	23.2
Unsubsidized housing	49.4	44.4	5.0***	11.2
Last quarter of year 2				
Assisted housing	58.5	60.7	-2.2	-3.7
Unsubsidized housing	54.1	51.5	2.6	5.1
Ever employed, years 1 and 2				
Assisted housing	82.6	82.4	0.2	0.2
Unsubsidized housing	81.4	79.0	2.4**	3.0
Average TANF payments (\$)				
Year 1				
Assisted housing	2,748	2,979	-231***	-7.8
Unsubsidized housing	2,299	2,405	-106**	-4.4
Year 2				
Assisted housing	1,332	1,866	-534***	-28.6
Unsubsidized housing	968	1,285	-317***	-24.7
Average total payments, years 1 and 2				
Assisted housing	4,080	4,845	-765***	-15.8
Unsubsidized housing	3,267	3,690	-422***	-11.5

Source: Earnings and employment data are from Delaware's unemployment insurance wage records; housing assistance data are from HUD.

Note: Sample sizes for the subgroups are as follows: assisted housing, $n = 1,002$, and unsubsidized housing, $n = 2,810$. Shaded cells indicate where the F test rejected the null hypothesis of equal subgroup impacts.

* $p < 0.1$. ** $p < 0.05$. *** $p < 0.01$. P values indicate that the means differ significantly for the two groups.

There could be more than one reason why clients getting assistance had larger impacts on employment and earnings in the later Indiana cohort but not in the early one or in Delaware. The follow-up period for the later Indiana cohort coincided with an especially strong state economy, with unemployment rates hovering around 3 percent. It is possible that a strong economy benefits recipients of place-based housing assistance more than other welfare recipients because the greater mobility is worth less when the economy is strong and jobs are easy to get everywhere.¹⁷ However, control group members were living in the same economy. The simplest explanation seems to be that the strengthened disregard policy, which took effect in Indiana during the two-year follow-up period for the later cohort, triggered a greater response among assisted clients.

Beyond the experimental impacts, an examination of average outcome levels shows that, across all three samples, assisted subgroups more often than not had higher employment rates than unassisted subgroups. As noted earlier, this is the opposite of what economic theory would predict, and it is also surprising given the analysis of baseline characteristics, which found that the groups receiving housing assistance are not less disadvantaged than other welfare recipients. An intriguing question for future research is why employment rates are not lower for welfare recipients who get assistance.¹⁸

Does welfare reform increase or decrease the use of housing assistance for those who were getting it when the program began?

In contrast to the previous question, which focused on the economic impacts for subgroups defined by housing assistance status at baseline, this question focuses on housing assistance as an outcome. Welfare reform could either increase or decrease the use of housing assistance. By increasing employment and earnings, welfare reform could reduce the need for, and thereby hasten exits from, housing assistance. However, families that are getting housing assistance and leave welfare involuntarily because of sanctions or time limits may have a greater need for assistance and so may be less likely to leave it. Welfare reform might also affect housing assistance by changing family structure—for example, by increasing marriage rates (which could increase the likelihood of exiting assistance) or increasing the proportion of child-only families (which could decrease the likelihood of exiting assistance).

¹⁷ Table 1 shows that residents of public housing and Section 8 projects, both place-based, dominate the assisted housing group.

¹⁸ A possible explanation, based partly on the results of our analysis, is that housing assistance provides families with stability, and stability makes it easier for people to become or remain employed.

The micro or individual effects of welfare reform on housing assistance have macro implications for HUD programs. Changes in income induced by welfare reform affect the subsidy amounts needed for families living in public housing or Section 8 projects or using vouchers. Welfare reform induced—changes in the duration of housing assistance would affect the length of waiting lists.

Just as welfare reform reduced the receipt of other forms of public assistance (TANF and food stamps), it had negative impacts on housing assistance. For the early Indiana cohort, welfare reform increased the rate of exit from public housing in the first two years of follow-up, although the impact faded in subsequent years (figure 1).¹⁹ For families using vouchers at baseline, welfare reform decreased voucher use in year 5, but not earlier in the follow-up period (figure 2). The reason for the different timing of impacts for public housing and vouchers is not known.²⁰ The negative impact of welfare reform on housing assistance implies a small decrease in the waiting lists, but also raises the question of whether the additional families leave housing assistance because of improvements in their financial or living situations and continue to be financially stable.

Conclusion

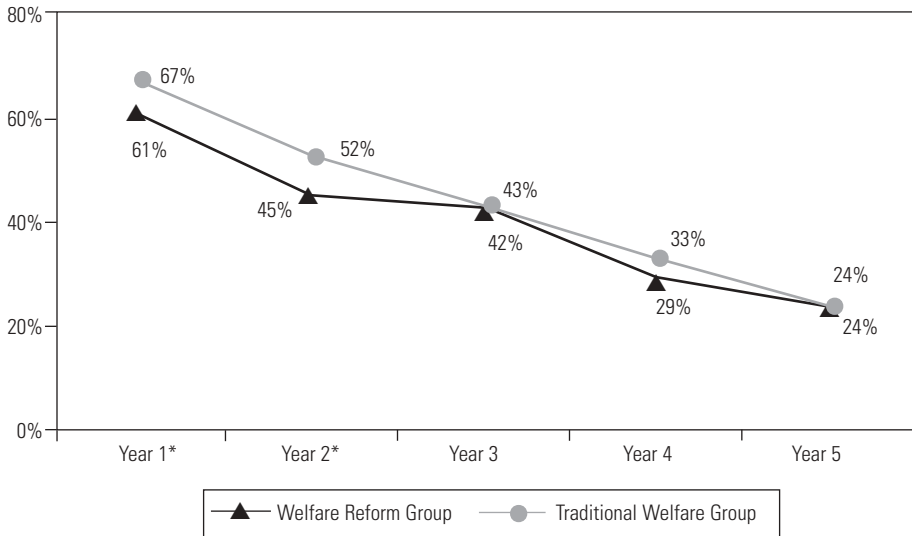
For two of the three cohorts examined, we find no evidence that welfare reform had different employment and earnings impacts for recipients who receive housing assistance compared with those who do not. For both groups, reform increased employment and earnings and decreased welfare receipt. The exception is the later Indiana cohort, where the subgroup getting assistance had larger gains in employment and earnings than the unassisted subgroup. In terms of TANF receipt, reductions for families in Delaware were larger for those who got assistance than for those who did not. Table 10 summarizes the impact findings.

The pattern of earnings and employment impacts for the three cohorts in this study and previous research in Minnesota and Connecticut suggests that welfare recipients getting assistance may have larger responses than unassisted families to more generous earnings disregards, provided that they are clearly

¹⁹ This analysis is presented only for the early Indiana cohort because the longer follow-up period makes the results more informative.

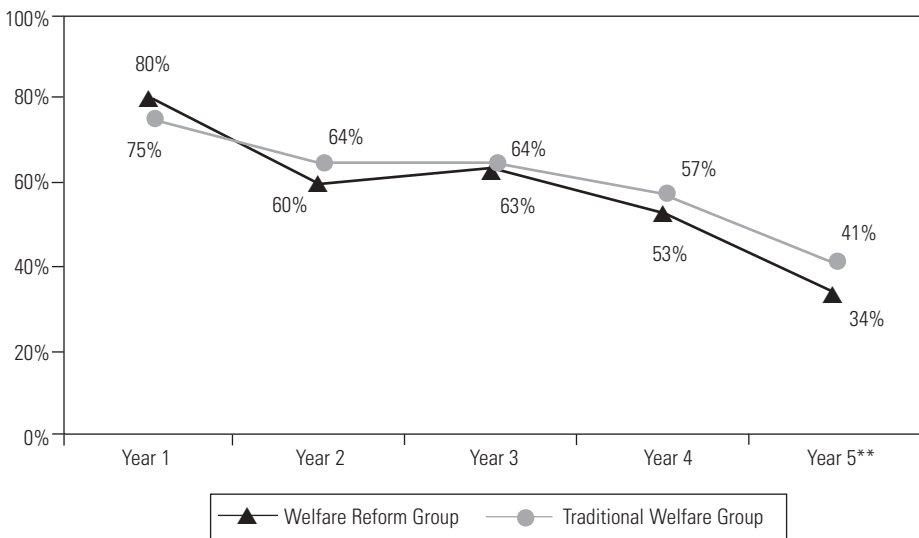
²⁰ We investigated one possible line of causation: Perhaps welfare reform increased the likelihood of moving, and moving increased the likelihood of exiting from housing assistance. Indiana follow-up survey data, however, do not fully support this speculation. Although welfare reform increased the likelihood of moving for voucher users, it decreased the likelihood for public housing residents and had no impact for sample members in unsubsidized housing.

Figure 1. Impacts on Public Housing Receipt for Sample Members, for Families in Public Housing at Random Assignment, Early Indiana Cohort (N = 3,394)



Note: * $p < 0.1$ indicates significant differences in means between the two groups.

Figure 2. Impacts on Voucher Receipt, for Families Using Vouchers at Random Assignment, Early Indiana Cohort (N = 3,478)



Note: ** $p < 0.05$ indicates significant differences in means between the two groups.

Table 10. Summary of Subgroup Experimental Impact Findings Based on Administrative Data

	Employment	Earnings	TANF Payments	Food Stamp Payments	Use of Public Housing	Use of Vouchers
Early Indiana Cohort	ND	ND	ND	ND	Treatment group exits from public housing more quickly in years 1 and 2	Treatment group uses vouchers significantly less, but only by year 5
Later Indiana Cohort	LGHA	LGHA	ND	ND	X	X
Delaware	ND	ND	LRHA	X	X	X
Connecticut	LGHA	LGHA	ND	X	Temporary reduction in public housing receipt during year 3	ND
Minnesota	LGHA	LGHA	LGNHA	X	ND (analysis combines public housing with vouchers)	

Source: Results for Connecticut and Minnesota are from Verma and Riccio (2003).

Note: ND = no difference across housing assistance subgroups; LGHA = larger gain for the housing assistance subgroup; X = data not available; LGNHA = larger gain for the non-housing-assisted subgroup; LRHA = larger reduction for the housing assistance subgroup. Since Connecticut and Minnesota have considerably more generous earnings disregards than Indiana or Delaware, the results for TANF payments are not directly comparable.

communicated. The Minnesota and Connecticut samples and the later Indiana cohort all had larger employment and earnings impacts for clients receiving assistance, and all had more generous earnings disregards for the treatment group. The early Indiana cohort did not have larger earnings and employment impacts for clients getting assistance, but also did not have more generous earnings disregards. The Delaware sample showed no difference in earnings impacts for the assisted subgroup and did have a more generous disregard (though less generous than the later Indiana cohort). The evidence from survey research, however, is that the more generous disregard was not understood nearly as well as the harsher aspects of the Delaware reform.

The research to date suggests therefore that earnings disregards may disproportionately affect welfare recipients who get housing assistance, perhaps as a consequence of the interactions among the implicit taxes in the welfare and housing programs. Future research can attempt to validate this hypothesis with other samples and identify the reasons that assisted families may have a greater response to more generous earnings disregards.

Another issue for future research is how the findings to date may be affected by the federal five-year time limit on TANF receipt, which none of the sample members in this study reached during the follow-up period, and by increased work requirements as a result of TANF reauthorization.

We also find some evidence that welfare reform decreased the use of housing assistance for both public housing residents and voucher users. The timing of these reductions differed for reasons that are unclear. It is natural to view these effects as indicators of welfare success. We caution, however, that although reduced use of housing assistance is to be welcomed if it is a by-product of increased employment and earnings, it may be a side effect of reduced family stability as well.

Contrary to both simple economic theory and our analysis of baseline characteristics, as a whole, welfare recipients who get assistance do not have lower levels of average employment and earnings than those who do not. Together with the findings that welfare reform impacts were not smaller (and were in some cases larger) for assisted recipients, our research finds no evidence that these clients need extra help to meet the demands of welfare reform. Nevertheless, both this work and previous research show that most welfare recipients, regardless of whether they get housing assistance or not, remain in poverty several years after being subject to welfare reform.

The intriguing finding that assisted families exhibit fewer signs of financial strain than other welfare recipients suggests an important benefit of housing assistance. The additional financial stability it confers may facilitate the transition from welfare to work.

Appendix A

Data sources used in the analysis

Our analysis is based on administrative records and survey data.

HUD administrative data. Information on receipt of housing assistance comes from two databases:

1. Multifamily Tenant Characteristics System (MTCS) data contain records of families that receive assistance under HUD's public housing, voucher, Section 8 certificate, and Section 8 moderate rehabilitation programs.²¹ Public housing authorities submit records to MTCS.

²¹ Section 8 certificates, which preceded vouchers, are treated as vouchers in our analysis. Families in Section 8 moderate rehabilitation projects are grouped with families in other Section 8 projects.

2. Tenant Rental Assistance Certification System (TRACS) data include records of families subsidized under the Section 8 new construction, substantial rehabilitation, and loan-management set-aside programs, along with families that live in privately owned subsidized multifamily projects but do not receive Section 8 assistance. Private owners who have direct contracts with HUD submit records to TRACS.²²

Appendix B describes how HUD data were matched to the evaluation sample and how assistance is measured.

Other administrative data. Outcomes data come from state welfare databases and quarterly wage records for unemployment insurance.

1. The Indiana Client Eligibility System (ICES) provided information on the welfare eligibility, food stamp eligibility, and employment and training activities of all welfare recipients in Indiana. Our analyses are based on longitudinal files created from monthly ICES extracts.
2. The Delaware Client Information System (DCIS) provided data on the welfare eligibility of all welfare recipients in Delaware. Our analyses are based on longitudinal files created from monthly DCIS extracts.
3. Unemployment insurance wage system records from Indiana and Delaware show total earnings by calendar quarter. These data are independent of welfare status and can be used to examine employment and earnings for the entire sample over time. For Indiana, data are available from the beginning of the demonstration. For Delaware, data are available from the third quarter of 1996.

Survey data. Client follow-up surveys were administered in each state.

1. The Indiana Wave 2 survey interviews were completed with 2,359 families that received welfare during the first year of the state welfare reform program (the early cohort). Approximately three-quarters of the interviews were conducted in respondents' homes; the rest were conducted by telephone. Survey interviews were conducted between March and November 2000, on average five years after the families became subject to the state's welfare reform policies. The survey response rate was 70 percent.

²² For our analysis, families that live in subsidized projects (e.g., Section 236 projects or Section 221(b)(3) below-market interest rate projects) but do not receive Section 8 assistance are grouped with families in Section 8 projects.

2. The Delaware Wave 2 survey interviews were completed with 1,599 adults who received TANF benefits at some point between October 1995 and December 1996. Survey interviews were conducted by telephone between September 1999 and July 2000. As was the case with the Indiana survey, the response rate was 70 percent.

Appendix B

Measuring housing assistance at baseline

To analyze subgroups in a way that retains the advantages of experimental design for measuring the impact of a policy intervention, it is necessary to define subgroups using information from the time of random assignment. That is, the characteristics that define the subgroup should not be endogenous. They should not be something that happened during the experiment and could have been affected by the intervention itself.

Ideally, therefore, the information used to construct subgroups should consist of whether a welfare recipient is receiving housing assistance (and what type) at baseline—during the month of random assignment. However, this would require matching HUD administrative data files for the specific month in which random assignment took place to welfare recipients' records, and this was not feasible. The best available files with historical data on the households that receive housing assistance are assembled, cleaned, and stored once or twice a year, not monthly.

There are two HUD data systems on households that receive housing assistance. The MTCS contains records of families subsidized under the public housing, certificate, voucher, and Section 8 moderate rehabilitation programs. The TRACS contains records of families subsidized under the Section 8 new construction, substantial rehabilitation, and loan-management set-aside programs, along with several other programs that subsidize units in specific privately owned projects. Public housing authorities submit records to MTCS, while private owners with direct contractual relationships submit records to TRACS. We matched the samples of welfare clients in the Indiana and Delaware experiments to the MTCS and TRACS and accepted all matches, regardless of program. We created four subgroups based on housing assistance status:

1. Welfare recipients living in public housing
2. Welfare recipients using vouchers (including both certificates and vouchers)
3. Welfare recipients living in Section 8 projects (in units with Section 8 moderate rehabilitation, new construction, substantial rehabilitation, or

loan-management set-aside subsidies, or in units in other privately owned assisted housing projects that report data to TRACS)

4. Welfare recipients who were not found in MTCS or TRACS and were classified as living in unsubsidized private market housing (or, put another way, not receiving housing assistance)

We may have misclassified the housing assistance status of some welfare recipients in the Indiana and Delaware samples for two reasons.

Inaccurate reporting. First, MTCS and TRACS reporting could be incomplete or inaccurate. Unlike state welfare files, which are kept by the agency actually making payments to households, with recording triggered by the payments themselves, MTCS and TRACS data are reported to HUD by local public housing authorities (PHAs) or private owners, with at best a short lag. Some data may simply never be reported. Recording is not triggered by a specific monthly payment, but by several events in the process of assisting a particular household. These include admission to a housing assistance program, recertification of income eligibility and the applicable level of rent subsidy (which should occur every 12 months), and the end of the household's participation in the program. A PHA or private owner may fail to report a household's record at admission or recertification, and this could lead us to fail to match a recipient to a housing assistance program. Or a PHA or owner may fail to submit an "end-of-participation" record, and this could lead us to identify a household that was no longer receiving housing assistance as still receiving it at random assignment.

Timing of MTCS and TRACS files compared with random assignment. In addition, because we could not use monthly MTCS and TRACS files, we may have misclassified a few welfare recipients as getting assistance at baseline when it really started after random assignment. The following tables suggest the extent of the possible misclassification resulting from the timing of the MTCS and TRACS files: Table B.1 illustrates the timing of the matching procedure for the early Indiana cohort.

The last column in the table shows the maximum number of months of endogenous housing assistance data (the months after random assignment during which the welfare recipient could have begun to receive housing assistance).²³ The criteria for which MTCS or TRACS file to use to match data were

²³ If two numbers are shown in the column, the first refers to matching on the MTCS data and the second to matching on the TRACS data. If only one number is shown, the same number applies to both MTCS and TRACS data.

Table B.1. Matching HUD Data for the Early Indiana Cohort

Month of Random Assignment	MTCS Data Used	TRACS Data Used	Maximum Number of Endogenous Months (MTCS/TRACS)
May 1995	May 1995	December 1995	0/6
June 1995	December 1995	December 1995	5
July 1995	December 1995	December 1995	4
August 1995	December 1995	December 1995	3
September 1995	December 1995	December 1995	2
October 1995	December 1995	December 1995	1
November 1995	December 1995	December 1995	0
December 1995	December 1995	December 1995	0
January 1996	December 1996	December 1996	10
February 1996	December 1996	December 1996	9
March 1996	December 1996	December 1996	8
April 1996	December 1996	December 1996	7

Note: Endogenous months are the number of months a welfare recipient may have been exposed to welfare reform before beginning to receive housing assistance.

chosen, not to minimize the number of endogenous months, but to ensure that the fewest matches would be lost. For example, March 1996 enrollees could have been matched to the December 1995 MTCS/TRACS files instead of the December 1996 files. In this case, there would have been no possible endogenous months. But the trade-off is that welfare clients who entered housing assistance between December 1995 and February 1996 would have been incorrectly classified as living in unsubsidized, private market housing at baseline.

Tables B.2 and B.3 illustrate the matching procedure for the later Indiana cohort and for the Delaware cohort.

Table B.2. Matching HUD Data for the Later Indiana Cohort

Month of Random Assignment	MTCS Data Used	TRACS Data Used	Maximum Number of Endogenous Months (MTCS/TRACS)
March 1998	May 1998	June 1998	1/2
April 1998	May 1998	June 1998	0/1
May 1998	May 1998	June 1998	0
June 1998	May 1999	June 1998	10/0
July 1998	May 1999	June 1999	9/10
August 1998	May 1999	June 1999	8/9
September 1998	May 1999	June 1999	7/8
October 1998	May 1999	June 1999	6/7
November 1998	May 1999	June 1999	5/6
December 1998	May 1999	June 1999	4/5
January 1999	May 1999	June 1999	3/4
February 1999	May 1999	June 1999	2/3

Note: Endogenous months are the number of months a welfare recipient may have been exposed to welfare reform before beginning to receive housing assistance.

Table B.3. Matching HUD Data for the Delaware Cohort

Month of Random Assignment	MTCS Data Used	TRACS Data Used	Maximum Number of Endogenous Months (MTCS/TRACS)
October 1995	December 1995	December 1995	1
November 1995	December 1995	December 1995	0
December 1995	December 1995	December 1995	0
January 1996	December 1996	December 1996	10
February 1996	December 1996	December 1996	9
March 1996	December 1996	December 1996	8
April 1996	December 1996	December 1996	7
May 1996	December 1996	December 1996	6
June 1996	December 1996	December 1996	5
July 1996	December 1996	December 1996	4
August 1996	December 1996	December 1996	3
September 1996	December 1996	December 1996	2

Note: Endogenous months are the number of months a welfare recipient may have been exposed to welfare reform before beginning to receive housing assistance.

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