

**Women and Drug Crime:
The Role of Welfare Reform**

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Session: "Gender and Social Policy (J7)" sponsored by CSWEP
Session Chair: Shirley Johnson-Lans (Vassar College)
Discussants: Anne Winkler (University of Missouri-St. Louis), Ann Mari May (University of
Nebraska-Lincoln), Tracy Falba (Duke University), Paul Glewwe (University of Minnesota)

Women and Drug Crime: The Role of Welfare Reform

Hope Corman, Dhaval M. Dave, Nancy E. Reichman, and Dhiman Das¹

Although crime is perceived to be a male activity and the propensity to engage in crime is higher for males than females, there is a secular trend in female crime in the U.S. that has received little attention. In 1960, about 10% of arrestees for serious felony property crimes were women; that share increased to 35% by 2006. In 1960, 10% of arrestees for violent crimes of murder, manslaughter, and felonious assault were women; that share almost doubled by 2008. In 1980, the first year for which relevant data are available, 13% of all drug-related arrestees were women; that share increased to 19% by 2008 (Bartel 1979; U.S. Department of Justice). Thus, although women do commit fewer crimes than men, they account for a non-trivial and growing share of all crimes committed.

As far as we know, only two empirical studies in the economics literature have specifically focused on causes of female crime (Bartel, 1979; Phillips and Votey, 1984) and those were published over 25 years ago. Since then, there have been large increases in labor force participation, decreases in fertility, increases in real wages, and increases in educational attainment among women. At the same time, nonmarital childbearing has increased, with over one third of births in the U.S. now taking place out of wedlock. These dramatic changes, which

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began around 1960 and are often referred to as “the second demographic transition,” have resulted not only in increased economic opportunities but also in rising income inequality among women, particularly among mothers with young children (see McLanahan 2004). According to Freeman (1996), rising economic inequality has fueled increases in crime among young black men. It seems reasonable to speculate that widening income inequality among women under the second demographic transition has similarly fueled recent increases in women’s crime. However, it is empirically difficult to identify causal effects of a multifaceted demographic transition. This study makes inroads into understanding the role of social forces over the last several decades in shaping women’s criminal behavior by investigating the effects of welfare reform, a recent and large-scale policy shift that was designed to both increase female employment and decrease nonmarital childbearing, on one type of criminal behavior among women. We focus on drug crime, the single largest component of arrests in the U.S., accounting for 1.3 million arrests in 2008 (U.S. Department of Justice), and an activity that confers substantial costs to society that include healthcare utilization, reduced productivity, and criminal justice expenditures.

The Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996, often referred to as welfare reform, ended entitlement to welfare benefits under Aid to Families with Dependent Children (AFDC) and replaced AFDC with Temporary Assistance for Needy Families (TANF) block grants to states. Features of the legislation included time limits on cash assistance, work requirements as a condition for receiving benefits, and increased state latitude in establishing program rules. Although welfare reform is often dated to the 1996 PRWORA legislation, reforms actually started taking place in the early 1990s with expansions in the use and scope of “welfare waivers.” Many policies and features of state waiver programs were later incorporated into TANF. PRWORA emphasized a “work first” approach designed to

reduce welfare dependence and reconnect members of an increasingly marginalized underclass to the mainstream ideals of a strong work ethic and civic responsibility (Katz 2001). Welfare reform has been considered a success in that welfare rolls declined and employment rates of low-skilled mothers rose dramatically after implementation and at least some of those changes can be attributed to welfare reform (Schoeni and Blank 2000; Ziliak 2006).

By linking welfare benefits to work, making benefits time limited, and imposing a culture of personal responsibility, welfare reform may have increased the costs and decreased the benefits to women of engaging in crime. Welfare reform would reduce crime if: (1) Work requirements result in increased legal wages (from greater work experience), increasing the gains from legal work versus crime; (2) the mark of a criminal record becomes more consequential (in terms of fewer available jobs and lower wages) because the individual expects to rely on welfare less and to work more; (3) work decreases the woman's taste for crime and rate of time preference; (4) welfare reform reduces income inequality and income inequality causes crime; or, for drug crime in particular, (5) welfare reform increases income and illicit drugs are an inferior good. In addition, the PRWORA legislation included direct policies vis-à-vis illicit drug use that should specifically discourage drug crime. TANF benefits are denied, for life, to women who are convicted of a drug felony unless a state has enacted legislation to modify or opt out of the lifetime drug sanction. States can also test and sanction recipients for drug use. Although many states have chosen to implement drug sanctions less strict than those proposed in the initial PRWORA legislation, TANF has been much tougher than its predecessor AFDC on drug use.

On the other hand, welfare reform could potentially increase crime if both legal and illegal work become more desirable by virtue of cash assistance becoming conditional and time limited, if welfare reform increases income inequality and income inequality causes crime, or—

for drug crime in particular—if welfare reform increases women’s demand for drugs, through increased income (if drugs are a normal good) or the stress of dealing with the realities of welfare reform (which could increase utility from using drugs).

Thus, welfare reform may have increased, decreased, or not affected drug crime of women potentially eligible for welfare. However, given the strong work incentives and direct penalties for illicit drug use under PRWORA, we expect that the negative effects on women’s illicit drug crime will dominate the potential competing and less direct effects. That is, we expect that welfare reform reduced adult women’s drug-related arrests and imprisonment.

Exploiting changes in welfare policy across states and over time, and comparing relevant population subgroups within an econometric difference-in-differences framework, we estimate the causal effects of welfare reform on adult women’s drug-related arrests and imprisonments from 1992 to 2002, the period during which welfare reform unfolded.

II. Data

Because there is no standard way to measure drug crime, we consider two different levels of involvement with the criminal justice system (arrests and imprisonment) and two different categories of drug crime (possession and sales) using: (1) Monthly state-level arrest data from Federal Bureau of Investigation (FBI) crime reports, which are based on data collected from most large criminal justice agencies in the U.S. (2) Annual state-level admissions into correctional facilities derived from the National Corrections Reporting Program (NCRP). In addition to measuring drug crime at a broad level reflecting first contact with the criminal justice system, an advantage of the FBI data is the monthly frequency, which allows us to more accurately capture policy variation. The NCRP data on imprisonments characterize a “hard core” subset of drug arrestees, since many arrestees are not convicted and many who are convicted are not sent to prison. An advantage of the NCRP data is that they include demographic information

sufficiently detailed to allow us to consider alternate comparison groups. It is important to note that for 5% of arrests and 28% of prison admissions for drug crimes, the specific type of crime (possession or sales) is not reported.

Following the convention in the literature (see Blank 2002), we exploit differences in the timing of welfare reform across states with respect to both AFDC waivers and TANF. It is important to consider waivers and TANF separately, since the two phases of welfare reform may have had different effects on behavior. As discussed earlier, the PRWORA legislation banned welfare participation for individuals with a conviction for a drug felony. Although states could opt out or modify the ban, this rule imposed stricter sanctions than those imposed under AFDC waivers. Thus, the effects of welfare reform on drug crime may be more negative (or less positive) under TANF than under the waivers.

III. Methodology

We use a difference-in-differences specification that exploits variation in welfare policy across states, over time, and between target and comparison groups to identify the effects of welfare reform on drug-related arrests and drug-related prison admissions. The ideal target group is women at risk of being on public assistance, which traditionally has consisted primarily of low-educated, unmarried mothers. The ideal comparison group is similar women who are not at risk for public assistance. For each dataset, we define target and comparison groups as close to these ideals as possible, given data constraints. For our analyses of arrests, we conduct female to male comparisons (although this comparison does not seem ideal given the differential long-term trends discussed earlier, we conduct supplementary analyses, described later, to assess validity and robustness). In particular, for drug possession and drug sales arrests, we compare females 21-49 years old to same-aged males. For analyses of prison admissions, we compare females

ages 21-49 with less than a high school education to females in the same age range with at least a high school education (marital status is not available in the NCRP and the numbers of imprisoned females with more than a high school education are very small).

To assess the validity of the comparison groups, we investigated pre-welfare reform trends. We found that drug-related arrest rates of males and females exhibited similar trends in the period immediately preceding welfare reform (1988-1991). Trends in drug-related prison admissions were also very similar for low- and higher-educated females in this baseline period and we found no statistically significant difference in trends across groups. Such “parallel” pre-welfare reform trends are validating and lend plausibility to the assumption that individuals in the comparison group represent a suitable counterfactual to individuals who are impacted by welfare reform (results available at [WEBSITE]).

All models include indicators for whether a given state had a major AFDC waiver in place at time t and whether a given state had implemented TANF at time t . The coefficient of the interactions between these welfare reform measures and the target group indicator represent the difference-in-differences estimates of the impact of the welfare reform on drug crime (see Corman et al. 2010 for a detailed description of the methodology).

To control for additional state-level variables that may confound the relationship between welfare reform and drug crime, all models include the state/year unemployment rate and personal income per capita, poverty rate, minimum wage, criminal justice expenditures, substance abuse prevention and treatment block grant, state population, and relevant measures of total state arrests (see [WEBSITE] for data sources). We also include measures of the relevant population base depending on the analysis sample and account for unobserved state-specific time-invariant heterogeneity through state fixed effects and unobserved national trends through month (FBI)

and year (NCRP and FBI) effects. Alternative specifications further account for systematically-varying unobserved state factors through state-specific linear trends. All models are estimated using Ordinary Least Squares, and estimates are not sensitive to estimation via probit or logit. Standard errors are adjusted for arbitrary correlation across observations within each state.

IV. Results

Table 1 presents difference-in-differences estimates of effects of welfare reform on drug-related arrests and imprisonment, for both possession and sales. The models include the state-level variables described earlier plus state and time fixed effects (full regression results available at [WEBSITE]). The reported range of estimates corresponds to models that alternately control for lagged state economic conditions, lagged welfare caseloads, and state-specific linear trends.

Table 1. Effects of Welfare Reform on Women’s Drug-Related Crime

	Log Drug Arrests	Log Drug Prison Admissions
	Target Group: Females age 21-49 years Comparison Group: Males age 21-49 years	Target Group: Females age 21-49 years with < high school education Comparison Group: Females age 21-49 years with high school education
Drug Possession		
Waiver*target	-.05	-.09 to -.10
TANF*target	-.06* to -.07**	-.16* to -.16**
Drug Sales		
Waiver*target	-.14	.04 to .05
TANF*target	-.01 to -.02	-.13*

*** $p \leq 0.01$, ** $0.01 < p \leq 0.05$, * $0.05 < p \leq 0.1$

The estimates suggest that TANF reduced women's arrests for drug possession, by 6-7% (depending on model specification) relative to same-aged men. The effect size for AFDC waivers is similar to that of TANF but imprecisely estimated. The estimated effects of welfare reform on arrests for drug sales, which represent more serious crimes, are also negative but imprecisely estimated. TANF appears to have reduced drug possession-related prison admissions among low-educated females by 16% relative to higher-educated females. AFDC waivers also appear to have reduced drug possession-related prison admissions among the target group by about 10%, though the effect is imprecisely estimated. Finally, TANF reduced prison admissions due to drug sales by 13%, while, again, the effects of AFDC waivers are imprecisely estimated.

We performed numerous robustness tests. For arrests, since alternate comparison groups are not possible due to limited demographic information in the NCRP, we estimated models for the target group only that include corresponding male arrest rates as additional covariates. These analyses confirmed our main results that welfare reform reduced possession arrests but revealed no significant effects of welfare reform on arrests for drug sales. For prison admissions, we confirmed that the estimated effects of welfare reform were robust to alternate comparison groups (e.g., low-educated females vs. low-educated males). All estimates were also robust to alternate transformations of the dependent variable (log of the drug arrest rate or drug-related prison admissions rate, log of the odds of a drug arrest or drug-related prison admission).

The figures in Table 1 represent "reduced-form" estimates of the effects of welfare reform on women's drug crime. If these represent true causal effects, we would expect to find stronger effects in states that imposed stricter sanctions for drug use, states with stricter sanctions for non-compliance with work requirements, and states with stronger overall work incentives. We tested these hypotheses by estimating models of drug possession arrests and drug sales

arrests on samples of states stratified three ways: (1) Complete TANF ban for a drug conviction versus partial or no ban, (2) strict sanctions versus lenient or moderate sanctions, and (3) stronger work incentives versus more lenient work incentives (data sources for stratifiers available at [WEBSITE]). We found that the negative effects of TANF on drug crime are uniformly larger in stricter states. We performed comparable analyses for imprisonment for drug possession and for drug sales. We again found that strict sanctions and strong work incentives had negative greater effects on drug crime than their more lenient counterparts. However, TANF did not more greatly reduce drug-related imprisonment, for possession or sales, in states with a complete TANF ban for drug conviction than in states with a partial or no ban (results available at [WEBSITE]). Thus, it is possible that more serious drug crime is more a function of work incentives than drug sanctions. Further research is needed to further elucidate the mechanisms underlying the observed negative effects of welfare reform on women's drug-related arrests and imprisonment.

V. Conclusion

The findings from this study indicate that welfare reform led to declines in drug crime among adult women in the U.S. This result is important for understanding the full impact of welfare reform and highlights the importance of investigating a range of outcomes when analyzing the effects of broad-based social programs. It also suggests that properly designed work-incentive programs can decrease antisocial behavior. That said, we estimated average effects that coincided, for the most part, with a strong economy; the overall effects could mask considerable heterogeneity within the target population and might look very different during periods of economic recession. Finally, this study contributes to a sparse literature on the determinants of female crime and suggests that welfare reform was not a contributor to the dramatic rise in women's crime over the past several decades.

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Supplementary Tables

Log Drug-Related Prison Admissions
National Corrections Reporting System 1992-2002

Target Group	Females, Less-than-HS Ages 21-49					
Comparison Group	Females, HS or Higher Ages 21-49					
	All		Possession		Sales	
Specification	1	2	3	4	5	6
Target	0.0988 (0.0820)	0.0865 (0.0832)	0.0543 (0.0748)	0.0270 (0.0762)	0.0728 (0.0839)	0.0616 (0.0840)
AFDC Waiver	0.1744 (0.1205)	0.1498 (0.1000)	-0.1083 (0.1450)	-0.1304 (0.1528)	0.0433 (0.1290)	-0.0512 (0.1326)
AFDC Waiver * Target	-0.1503 (0.1254)	-0.1475 (0.1279)	-0.0993 (0.1089)	-0.0921 (0.1139)	0.0504 (0.1284)	0.0380 (0.1272)
TANF	0.0937 (0.2172)	0.1750 (0.2305)	0.1340 (0.2934)	0.3598 (0.3438)	0.1561 (0.2505)	0.2062 (0.2783)
TANF * Target	-0.1973** (0.0775)	-0.1955** (0.0798)	-0.1598** (0.0775)	-0.1606* (0.0808)	-0.1265* (0.0690)	-0.1301* (0.0734)
State-specific Linear Trends	No	Yes	No	Yes	No	Yes
Lagged State Economic Conditions ^a	No	Yes	No	Yes	No	Yes
Lagged State Welfare Caseload ^a	No	Yes	No	Yes	No	Yes
R-Squared	0.955	0.966	0.936	0.954	0.941	0.954
Observations	800	800	800	800	800	800

Notes: Coefficient estimates from OLS models are presented. Standard errors are adjusted for arbitrary correlation across observations within each state and reported in parentheses. All models also control for an indicator for the Target group, state indicators, year indicators, state unemployment rate, state personal income per capita, state poverty rate, state minimum wage, mean age of admission and its square, state substance abuse prevention and treatment block grant, log state population, log female population, log total state arrests, log state criminal justice spending, and an indicators for cells with zero admissions. Significance is denoted as follows: *** $p \leq 0.01$, ** $0.01 < p \leq 0.05$, * $0.05 < p \leq 0.1$

^aControls include one-year lags of the state unemployment rate and state personal income per capita, and one- and two-year lags of the state welfare caseload.

**Log Drug-Related Arrests
FBI Crime Reports 1992-2002**

Target Group	Females Ages 21-49					
Comparison Group	Males Ages 21-49					
Outcome	Log Total Drug-Related Arrests		Log Drug Possession Arrests		Log Drug Sale Arrests	
Specification	1	2	3	4	5	6
Target	-0.6237*** (0.1064)	-0.7298*** (0.1421)	-0.5968*** (0.1384)	-0.7115*** (0.1789)	-0.7593*** (0.1063)	-0.8513*** (0.1124)
AFDC Waiver	0.0477 (0.0585)	0.0537 (0.0689)	0.1231* (0.0672)	0.1363* (0.0764)	0.1190 (0.0997)	0.0635 (0.0942)
AFDC Waiver * Target	-0.0439 (0.0531)	-0.0440 (0.0514)	-0.0491 (0.0581)	-0.0483 (0.0562)	-0.1440 (0.0994)	-0.1430 (0.0996)
TANF	0.0613 (0.0471)	0.0434 (0.0472)	0.0617 (0.0691)	0.0363 (0.0630)	0.1157 (0.0759)	0.0745 (0.0656)
TANF * Target	-0.0541** (0.0253)	-0.0436* (0.0260)	-0.0690** (0.0310)	-0.0564* (0.0327)	-0.0217 (0.0385)	-0.0113 (0.0383)
State-specific Linear Trends	No	Yes	No	Yes	No	Yes
Lagged State Economic Conditions ^a	No	Yes	No	Yes	No	Yes
Lagged State Welfare Caseload ^a	No	Yes	No	Yes	No	Yes
R-Squared	0.961	0.967	0.956	0.964	0.933	0.941
Observations	11210	11210	10940	10940	10590	10590

Notes: Coefficient estimates from OLS models are presented. Standard errors are adjusted for arbitrary correlation across observations within each state and reported in parentheses. In addition to indicators for state, year, and month, all models also control for an indicator for the Target group, state indicators, year indicators, month indicators, state unemployment rate, state personal income per capita, state poverty rate, state minimum wage, state substance abuse prevention and treatment block grant, log state population of all agencies with population 50,000+, log covered population of reporting agencies, log total non-drug related state arrests, and log state criminal justice spending. Significance is denoted as follows: *** $p \leq 0.01$, ** $0.01 < p \leq 0.05$, * $0.05 < p \leq 0.1$

^aControls include one-year lags of the state unemployment rate and state personal income per capita, and one- and two-year lags of the s