

Unemployment and Welfare Reform in Rural California

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Abstract

Recent welfare reforms, designed to move adult welfare recipients into employment, promise to add 10 to 15 percent to labor forces in rural and agricultural areas of California with average annual unemployment rates of 12 to 20 percent. This paper develops and estimates a simultaneous-equation model to test the hypothesis that high unemployment and seasonality endemic to rural and agricultural industries promote welfare dependence and limit the potential to channel welfare recipients into gainful employment. If unemployment rates are not reduced, current welfare recipients in rural and agricultural areas may have lower incomes after reforms are fully implemented or else be induced to migrate to areas with jobs.

Introduction

The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PL 104-193, PRWORA) required states to move able-bodied adults receiving cash assistance into employment after two years of assistance and limited most able-bodied adults to a "lifetime" five years of cash assistance. PRWORA singled out immigrants for additional restrictions: most legal immigrants arriving after August 22, 1996 are not eligible for federal welfare assistance for at least five years, and many legal immigrants receiving assistance when PRWORA was enacted lost their benefits.¹ Welfare reform marks a watershed in social policy. However, its theoretical foundations may be problematic in rural areas where high levels of unemployment both promote welfare demand and limit the potential for labor markets to gainfully employ welfare recipients.

This paper utilizes simultaneous-equation techniques and a unique longitudinal data set from California to test the hypothesis that the probability of employment is lower in predominantly agricultural than in urban counties and is structurally related to welfare demand. That is, a low probability of employment in agricultural counties both

¹ PRWORA denied most federal welfare benefits to legal immigrants arriving after August 22, 1996; about \$24 billion or 45 percent of the projected \$54 billion over six years in savings from welfare reform came from making immigrants ineligible for benefits. Three laws since 1996 have restored about \$12.3 billion in benefits to legal immigrants: the Balanced Budget Act of 1997 restored SSI and Medicaid to 420,000 legal immigrants who arrived before August 22, 1996, at an estimated cost of \$11.5 billion over five years; The Agricultural Research Act of 1998 provided Food Stamps for 225,000 legal immigrant children, those over 65, and disabled immigrants who were in the US by August 22, 1996, at an estimated cost of \$818 million over five years; and the The Noncitizen Technical Amendments Act of 1998 permitted some disabled immigrants receiving welfare assistance in August 1996 to continue receiving assistance, even if they were too disabled to prove their date of entry into the US, at an estimated cost of \$41 million over five years.

promotes welfare use and limits the potential of labor markets to gainfully absorb welfare recipients. The corollary of this hypothesis is that policies limiting adult access to welfare will either reduce incomes of poor rural households or else induce rural welfare recipients to migrate to urban labor markets in an attempt to compensate for lost welfare income.

Objectives and Impacts of Welfare Reform

PRWORA ended welfare as a federal entitlement, replacing the 61-year-old Aid to Families with Dependent Children program (AFDC) with the Temporary Assistance for Needy Families (TANF) program. In California, PRWORA was implemented through the California Work Opportunity and Responsibility to Kids Program (CalWORKS), which went into effect January 1, 1998. Under CalWORKS, individual adult recipients of cash assistance are required to sign welfare-to-work (WTW) contracts that spell out the requirements imposed by county counselors to engage in job search activities or obtain supportive services that make the recipient employable (Klerman, et. al.. 1999; Nyberg, 2000). There are sanctions on individuals who refuse to work as well as on counties and the state if too few adults are working. The theory underlying welfare reform is that requiring adults to work generates wages for them and reduces the cost of welfare assistance to taxpayers. Work experience and supportive services, in turn, can increase human capital and thus the ability of current recipients to sustain themselves without assistance. Implementing a welfare-to-work strategy requires: (1) that jobs offering sustainable wages and benefits are available locally, or (2) that recipients are willing to migrate to where such jobs are available.

The number of persons receiving cash assistance in the US peaked at 14.4 million in March 1994 and fell to 6.6 million in September 1999, a decrease of 54 percent. According to estimates of the President's Council of Economic Advisers, most of the decline before 1996 was due to economic and job growth and increases in minimum wages; the federal minimum wage rose from \$4.25 in 1993 to \$4.75 in 1996. One-third of the decline in the caseload after 1996 was attributed to new welfare rules and regulations, and perhaps 10 percent to continued labor market improvements (CEA, 1999). A comprehensive review of welfare reform studies by Schoeni and Blank found that about 15 percent of the pre-1996 decline in caseload was due to policy changes, and 30 to 40 percent was due to improved labor market conditions. It concluded that welfare policy changes "reduced public assistance participation and increased family earnings...but the 1996 reforms had little additional impact on work behavior." That is, early 1990s federal waivers that gave states such as Wisconsin freedom to change welfare policies had more measurable impacts than post-1996 changes (2000, 1 and 25).²

Most studies of welfare reform's impacts examine changes in caseloads or in the work and well being of ex-recipients at the national or state level. This paper examines differences in caseload between agricultural and urban areas within California and tests for a structural relationship between the probability of employment and welfare

² Zilak et.al. attribute 78 percent of the pre-1996 caseload to economic growth, and only six percent to federal waivers.

demand. In California, the number of persons receiving cash assistance peaked at 2.7 million in 1995 and fell to 1.7 million in September 1999, a decrease of 37 percent. The slower decline in California than in the US has been attributed to an unemployment rate that remains above the US average rate and to persistent poverty and welfare dependence in rural and agricultural counties. (PHIL-NEED REFERENCE HERE.) California's share of US welfare recipients rose from 17 percent in 1993 to 25 percent in 1999.

PRWORA was widely expected to have different effects in rural and urban areas. High and seasonally fluctuating unemployment rates were expected to keep welfare dependency higher than average in rural areas, unless persons who depended on a mix of earnings, unemployment insurance, and welfare assistance found stable local jobs or moved from such areas. In the mid-1990s, about 60 percent of the US counties with the highest percentage of residents receiving cash assistance also had higher than average unemployment rates, and welfare assistance rates were not expected to drop in these counties until unemployment fell (Dyson, 1998; Findeis and Jensen, 1998; Goetz and Freshwate, 1997; Jensen and Yoshimi, 1997).

Welfare Reform in Rural and Agricultural California

Many of the factors that were expected to make it difficult to move adults from welfare to work are present in the rural and agricultural counties of California. California has led the nation in farm sales since 1950; its \$27 billion in farm sales in 1998 represented 13 percent of US farm sales. About half of California's farm sales represent fruit and nut, vegetable and melon, and horticultural specialty (FVH) crops such as mushrooms and nursery products, the production of which depends on hired workers, most of whom are employed seasonally.

Seasonal farm workers have traditionally been first-generation Hispanic immigrants with relatively little education. Although many of these immigrant farm workers do not receive cash welfare assistance, their children, born in the US and thus US citizens, as well as their US citizen and legal immigrant neighbors, are usually eligible for welfare assistance. The result in many rural and agricultural counties is a relatively large number of (1) child-only welfare cases in immigrant households and (2) second-generation immigrant households on welfare who are unwilling to follow their parents into the fields.

PRWORA aims to change traditional means of support in rural and agricultural areas and is expected to add 10 to 15 percent to the labor force in counties with average unemployment rates of 12 to 15 percent in 2000. The responses to welfare reform can be expected to differ between agricultural and urban areas for three major reasons:

- The starting point for rural counties was different. In 1995, 8 percent of California residents but 15 percent or more of residents in some agricultural countries received cash assistance.
- Recipients in farming counties often face higher hurdles to stable employment due to (1) their personal characteristics (in California, a higher percentage are not high-school graduates, lack English or skills, or lack transportation) and (2) the nature of

the economies in which they live (higher unemployment rates, more seasonality, and fewer jobs that offer benefits such as health insurance).

- There are fewer opportunities for economies of scale or experiments involving competition between public and private providers in rural areas with relatively few recipients and a high percentage of recipients with very specific needs, including relatives of incarcerated persons, Native Americans, and refugees.

California's eight county San Joaquin Valley (SJV) provides an example of the welfare-to-work challenge in rural and agricultural areas. The San Joaquin Valley is the nation's leading farm area: its \$14.5 billion in farm sales in 1998 would rank it as the third largest farm "state" in the nation, after California and Texas. However, the San Joaquin Valley's per-capita personal income of \$18,658 a year would rank it 49th among states; in constant dollars, per capita income in the SJV fell in the 1990s. The gap between earnings in the SJV and urban areas of the state is widening. In 1969, the average annual earnings were \$3,600 in Fresno and \$4,700 in San Jose; in 1997, they were \$19,000 and \$38,000, respectively.

The San Joaquin Valley has 3.3 million residents, 10 percent of California's population; its population has been increasing by 90,000 a year and is projected to reach 4.3 million in 2010. San Joaquin Valley residents are 53 percent non-Hispanic white, 34 percent Hispanic and eight percent Asian. Only about 66 percent of the adults are high-school graduates and 14 percent have college degrees.

The SJV unemployment rate averaged 13 percent in 1998, meaning that an average of 190,000 of the 1.5 million persons in the San Joaquin Valley labor force were unemployed. To put this level of unemployment in perspective, the state of Iowa and the eight-county San Joaquin Valley each have labor forces of about 1.5 million. In November 1999, Iowa had 31,000 unemployed workers; the San Joaquin Valley had 160,000. Competition for nonfarm jobs in the San Joaquin Valley can be intense. For example, when the Palace Indian Gaming Center in Lemoore, a casino, advertised 80 jobs in Fall 1999, 566 people applied; when Fleming Foods, a food distributor, advertised 100 jobs, 850 applied. (PHIL-NEED REFERENCE HERE.)

High levels of rural unemployment and seasonality raise a fundamental question: Will San Joaquin Valley adults expected to move from welfare to work--about half of whom do not have a high school diploma--be able to find jobs that provide earnings and benefits equivalent to cash and related welfare assistance? If not, the welfare-to-work challenge is likely to be different in the San Joaquin Valley than in midwestern states such as Iowa. In Iowa, welfare recipients can be pulled by low unemployment into vacant jobs; in the San Joaquin Valley, they are more likely to be pushed by the threat of sanctions into the labor force, given the jobs gap.

Theory

Individuals apply for welfare assistance, and county staff determines their eligibility for cash assistance and other benefits. Thus, a utility maximizing individual "chooses" to apply for welfare assistance if the expected value of benefits exceeds wages and benefits. Individuals currently receiving cash assistance can respond in four

ways: find employment, seek employment but be unemployed, migrate from the area, or shift from welfare assistance to being out of the labor force, not receiving cash assistance or seeking employment.

Data on individuals applying for and receiving welfare assistance is confidential, which explains why most welfare-related research uses a combination of administrative data, such as caseloads, and survey data, such as from the Current Population Survey (CPS), to examine how broad groups of recipients or ex-recipients are faring.³ For example, using CPS data, Katz and Murphy (1992) examined relative wage changes between groups of workers categorized by sex, education and experience from 1963 to 1987. They used an aggregate production function to derive the demand for various types of labor and assumed, in a partial equilibrium framework, that these groups of workers are imperfect substitutes, so that changes in relative wages reflect shifts in labor supply and demand.

We use county-level data on caseloads, unemployment, and other indicators that affect whether individuals choose to apply for welfare benefits. Our basic hypothesis is that welfare demand is associated with a low probability of finding employment, and employment probabilities are lower in predominantly agricultural than urban areas of California. Our analysis is founded on a simple labor supply and demand model, without imposing the assumption of full employment. Welfare demand is inversely related to the probability of employment, which for an individual of type i at time t is defined as:

$$(1) \quad E_{it} = D(w_{it}, z_{it}^D) / S(w_{it}, z_{it}^S, I_{it}) = \psi(w_{it}, z_{it}^D, z_{it}^S, I_{it})$$

where D denotes the demand for type- i labor, which depends on the prevailing wage, w_{it} , and a vector of demand shifters, z_{it}^D ; and S represents labor supply. The supply of type- i labor is a function of the prevailing wage; of nonlabor income, I_{it} ; and of a vector of supply shifters, z_{it}^S . The unconditional labor demand is derived from profit maximization subject to an aggregate production function, i.e.,

$$(2) \quad \begin{aligned} \max_{L_{it}} \pi_t &= p_t Q_t - w_{it} L_{it} - r_t K_t \\ \text{s.t. } F(L_{it}, K_t, x_{it}^D) &= Q_t \end{aligned}$$

where x_{it}^D is a vector of parameters influencing the productivity of labor and capital. (All nonwage prices are subsumed in the labor demand-shifter vector z_{it}^D .) The labor supply is derived from constrained utility maximization:

$$(3) \quad \begin{aligned} \max_{L_{it}} U(C_{it}, T - L_{it}) \\ \text{s.t. } C_{it} &\leq w_{it} L_{it} + I_{it} \end{aligned}$$

where C_{it} denotes consumption (with price normalized to 1) and T is the time endowment. In general, the entry-level wage is institutionally determined (i.e., the minimum wage binds) in the low-skill labor market to which most people leaving

³ The March Current Population Survey has a supplement that provides information on earnings and weeks worked in the 12 months before the survey.

welfare may supply their labor. Thus, the probability of employment is determined primarily by the supply and demand shifters (which may include welfare income). It is apparent from equations (1) - (3) that, when individuals leave welfare, their probability of finding work depends on the demand and supply of like workers.

Welfare demand depends upon the probability of employment; that is, $W_{it} = W(E_{it}, z_{it}')$, where z_{it}' is a vector of variables influencing individuals' eligibility for welfare given the probability of employment. The probability of employment and welfare demand need to be estimated jointly, using simultaneous equation techniques. Welfare reform substantially reduced eligibility for benefits, shifting W_{it} downward. In the section that follows, we use time-series county level data to estimate employment probabilities and their influence on welfare demand. Our key hypothesis is that the welfare-to-work jobs gap is wider in agricultural than in nonagricultural areas.

Estimation

The estimated model is a simultaneous two-equation triangular system of equations. The employment equation is:

$$(4) \quad E_{it} = \beta_1 + \beta_2 tlf_{it} + \beta_3 hsd_{it} + \beta_4 dq2_{it} + \beta_5 dq3_{it} + \beta_6 dq4_{it} + \beta_7 sjv_{it} + \beta_8 mw_{it} + \beta_9 app_{it} + \varepsilon_{it}$$

where the dependent variable, E_{it} represents the employment rate for county i in time period t ; tlf denotes the total labor force for county i and time period t ; hds represents the high school dropout rate; $dq2, dq3$, and $dq4$ represent quarterly dummies for quarter 2, quarter 3, and quarter 4, respectively; mw represents the minimum wage rate and app represents the number of apprehensions of illegal immigrants. The agricultural region dummy variable, sjv , equals 1 if the county is among the eight counties making up the San Joaquin Valley and zero otherwise.⁴ The San Joaquin Valley dummy variable acts as a proxy for total farm labor force in each county since the latter variable was not available for numerous counties.

The welfare equation is given by:

$$(5) \quad W_{it} = \beta'_1 + \beta'_2 E_{it} + \beta'_3 dq2_{it} + \beta'_4 dq3_{it} + \beta'_5 dq4_{it} + \beta'_6 sjv_{it} + \beta'_7 pop_{it} + \beta'_8 for_{it} + \beta'_9 child_{it} + \beta'_{10} eld_{it} + \beta'_{11} pd_{it} + \beta'_{12} pd * sjv_{it} + \eta_{it}$$

where the endogenous variables are the total number of adult recipients of cash assistance, W , and the employment rate, E , in the it h county at time period t . Population is denoted by pop ; the percentage of foreign born in county i at time period t is represented by for ; the percentage of families with children under the age of six years old is denoted by $child$, the percentage of households with elderly members (over

⁴ The eight San Joaquin Valley counties are: Fresno, Kern, Kings, Madera, Merced, Stanislaus, Tulare, and San Joaquin. We also employed a dummy variable for the Central Valley counties and California's fifteen leading agricultural counties by gross value of production in 1994, but the results were similar and are not reported.

65 years old) is presented by eld , and pd denotes a dummy variable that is equal to 1 after January 1998, the month that the PRWORA went into effect in California via the CalWORKS program. The other variables, $dq2, dq3, dq4$, and sjv are as defined in equation (4).

The anticipated signs of the coefficients on the variables in the employment equation are summarized in Table 1. The key variable in the employment equation is the San Joaquin Valley dummy variable, which captures the employment level in rural and agricultural counties relative to nonagricultural counties. A negative sign on the San Joaquin Valley dummy variable would suggest structural unemployment in rural labor markets; that is rural counties with a large farm labor force, other things being equal, having lower employment rates than urban counties. A positive sign would indicate the opposite, while an insignificant coefficient would imply that there is no difference between the employment rates in agricultural and nonagricultural counties.

The quarterly dummy variables allow for seasonality effects on employment. Significant coefficients on these variables would suggest seasonal shifts in employment, and thus in the welfare-jobs gap. We expect that, *ceteris paribus*, the employment rate increases in the spring, summer, and fall quarters relative to winter, and it decreases with the total labor force and as the percentage of high school dropouts rises. We expect the employment rate to decrease as the minimum wage rate increases and to increase as the number of apprehensions increases.

The key explanatory variable in the welfare equation is employment. Because lack of earnings is a major eligibility criterion for cash assistance, we expect a negative sign on the employment variable; that is, the number of adults receiving cash grant assistance decreases with employment. The sign of the population coefficient is likely to be positive. Other things (including unemployment) being equal, the larger the population the larger the number of potential candidates for cash grants. Population size may also affect welfare indirectly, if there are scale economies in the delivery of public assistance.

We expect a negative coefficient on the foreign-born variable, because PRWORA made most legal immigrants arriving after August 22, 1996 ineligible for federal cash assistance until they had 40 quarters of US employment (10 years) or became naturalized US citizens (possible after five years). Dependency ratios are expected to increase the number of welfare recipients, so we anticipate positive coefficients on the percentages of households with children under the age of six and with elderly members.

The policy dummy variable which captures the impact of PRWORA via the CalWORKS program would expect to decrease the number of adults receiving cash assistance if the policy is working properly. A positive sign on the San Joaquin Valley dummy coefficient would indicate that, controlling for employment (and other explanatory variables), agricultural counties have inherently higher welfare dependence than nonagricultural counties. A positive sign on the $pd*sjv$ interaction coefficient would indicate that welfare reform was less successful at reducing caseloads in California's major agricultural counties than elsewhere in the state.

Data and Results

The data to estimate our model consist of monthly observations from the 58 counties in California between January 1990 and June 1999. Due to missing observations on some of the variables, the model was estimated with 114 observations from each of 50 counties, a total of 5,700 observations. The employment data are monthly estimates of the number of employed persons by county: (www.calmis.cahwnet.gov/). The welfare data are the number of adults receiving cash assistance in each county.⁵

In order to obtain consistent and asymptotically efficient estimators of the parameters, we employed a cross-sectionally correlated and timewise autoregressive model (see, e.g, Kmenta pp. 622-625). An iterative estimation procedure was used that is equivalent to full information maximum likelihood estimation (Oberhofer and Kmenta (1974); Greene, pp.622-679 and Kmenta, pp. 618-622). We estimated the model using SHAZAM, version 8.0, and stacked the data, so that the model could be estimated with the pooled cross-section and time series routine in SHAZAM. We also estimated a cross-sectionally heteroskedastic and timewise autoregressive model and scaled the data by county population in order to reduce heteroskedasticity. The results were similar to the full cross-sectionally correlated and timewise autoregressive model. In addition, it should be noted that the triangular system is a simultaneous system since an endogenous variable, employment, appears on the right hand side of the welfare equation and the variance-covariance matrix of the error vector is not diagonal. However, the iterative generalized least squares estimation of the entire system, ignoring the simultaneity, is both consistent and efficient (see, e.g., Greene, p. 679).

The variables used in our econometric analysis are summarized in Table 2, and the results of the simultaneous-equation estimation are reported in Table 3. The empirical results in Table 3 show that the model fits the data very well: Buse's R-squared for the overall model is 0.84. These results are reported with the autoregressive coefficients unrestricted across cross-sections. The estimates of the autoregressive coefficients ranged from 0.61 to 0.99, with most of the estimates in the 0.90 - 0.99 interval.

Our findings confirm that the probability of employment is lower and welfare demand higher in California's major agricultural counties. The San Joaquin Valley dummy variable has a significant negative effect on the employment rate (-4.04, t-ratio = 60.37). Controlling for employment rate, the number of adult cash welfare recipients is *significantly higher* in the agricultural counties of the San Joaquin Valley than in the other California counties (6312.5 t-ratio = 5.849), which suggests that there is more dependence on cash assistance in San Joaquin counties regardless of employment. The empirical results confirm that PRWORA reduced the number of adults receiving cash assistance. The estimated coefficient on the welfare reform dummy, equal to 1 after the CalWORKS program went into effect in January 1998, is -129.55 with a t-statistic of 24.83. However, CALWORKS was less effective in California's major agricultural

⁵ The welfare data used are the number of persons receiving cash assistance each month by country, the 237 data (<http://migration.ucdavis.edu/rhr/data/237.htm>)

counties; the coefficient on the welfare reform – San Joaquin Valley interaction term in the welfare equation is significant and positive. Finally, the econometric results establish a negative association between employment and welfare caseloads: The number of adults receiving cash assistance decreases as the employment rate increases, other things being equal. The coefficient on the employment rate variable in the welfare equation is -7.213 and highly statistically significant with a t-ratio of 107.4.

All other coefficient estimates in the model conform to our a-priori expectations. We found a positive and significant relationship between employment and the total labor force; however, from a policy viewpoint the magnitude of the estimated coefficient on the total labor force is very small, 0.00001. A higher percentage of high school dropouts is associated with lower employment rates, and employment rates are significantly higher in spring, summer, and fall than in the default winter period. The three seasonality dummies were all positive and significantly different from zero, and a likelihood ratio test for joint significance of the three seasonality coefficients was highly significant ($2 \ln \lambda = 1990.6$). The total number of adults receiving cash assistance is positively related to county population and to the percentage of households with children under six years of age. It is negatively related to the number of foreign born, as expected, and positively related to the percentage of households with elderly members. Increases in the minimum wage rate decrease the rate of employment; the estimated minimum wage coefficient was -0.540 with a t-value of 7.13.

The empirical results strongly support the hypothesis that rural and agricultural counties have higher unemployment rates and higher welfare dependency rates than nonagricultural counties, and that there is a structural relationship between employment probabilities and welfare demand. Thus, creating jobs is an essential part of any welfare-to-work strategy in rural and agricultural areas; economic development must be an integral part of welfare reform.⁶ The alternative to creating jobs where welfare recipients live is to encourage and assist them to move to where the jobs are, as illustrated by Tulare county's efforts to move welfare recipients to meatpacking jobs in the Midwest.⁷

Conclusions

Policy changes can add significantly to the supply of labor in rural and agricultural areas. For example, environmental regulations that reduce forestry or fishery employment are often accompanied by transfer payments and economic development or migration assistance designed to avoid labor market disruptions. Welfare reform's effects are more generalized. Welfare-to-work policies add to the

⁶ This conclusion echoes that of Porterfield, 1998, p 999: "the most predictable method of removing women from the welfare rolls...is to provide them with the means of increasing their income through increased or higher paid work."

⁷ The More Opportunities for Viable Employment (MOVE) project, spearheaded by the Tulare County Office of Education and See & Co. of Visalia, moved 600 Tulare county residents to the Midwest in 14 months between 1998-99, an average 43 a month. Most left for meat and poultry packing jobs that typically pay \$7 to \$8 an hour and about half were welfare recipients.

labor supply in all US counties. However, the econometric findings reported in this paper indicate that welfare reform is likely to be less effective at moving people into the workforce in rural and agricultural counties with higher-than-average percentages of adults receiving assistance and low employment rates prior to welfare reform.

Econometric analysis of welfare and unemployment in California's agricultural heartland suggest that there is likely to be a significant job gap as welfare reform pushes current recipients off the rolls. Welfare-to-work programs in major agricultural areas such as the San Joaquin Valley need to be linked closely to economic development strategies that create jobs offering current adult recipients earnings and benefits equivalent to the value of their welfare benefits.⁸ Without such job creation, welfare reform will either result in lower rural incomes or increased migration out of rural areas in search of employment.

⁸ Findeis and Jensen (1998, 1006) conclude that welfare recipients in rural America are less likely to find jobs as they leave the rolls, and the jobs they find are more likely to be marginal than jobs found by those exiting the rolls in urban areas. Thus, even those who find jobs are likely to remain poor unless they improve their human capital.

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Accounting for the Decline in AFDC Caseloads: Welfare Reform or Economic Growth? James P. Ziliak, David N. Figlio, Elizabeth E. Davis, and Laura S. Connolly

DP 1151-97

Table 1. Expected Signs of Model Coefficients

Variable	Employment Equation	Welfare Equation
<i>tlf</i>	-	
<i>hsd</i>	-	
<i>dq2</i>	+	?
<i>dq3</i>	+	?
<i>dq4</i>	+	?
<i>sjv</i>	-	?
<i>pd</i>		-
<i>pd*sjv</i>		+
<i>mw</i>	-	
<i>app</i>	+	
<i>emp(E)</i>		-
<i>pop</i>		+
<i>for</i>		-
<i>child</i>		+
<i>eld</i>		+

Table 2. Summary Statistics of Variables in Model

Variable	Mean	Std. Dev.
Endogenous Variables		
Employment Rate (E)	90.12	5.348
Adults Receiving Cash Assistance (W)	5571.6	505.12
Exogenous Variables		
Total labor force (tlf)	182330	293750
High School Dropout Rate (hsd)	0.116	0.042
Minimum Wage (mw)	4.450	0.402
Apprehensions (app)	108390	33619
Population (pop)	36836	595480
Foreign Born (for)	0.113	0.0750
Families with Children Under six (child)	0.896	0.0139
Families with Elderly Members (eld)	0.132	0.0401

Sample Size = 5,700.

Table 3. Iterative GLS Estimates of Employment and Welfare Model

Variable	Employment (E) Equation		Welfare (W) Equation	
	Coefficient	T-Statistic	Coefficient	T-Statistic
<i>tlf</i>	0.00001	106.6		
<i>hsd</i>	-9.450	16.15		
<i>dq2</i>	1.264	47.91	54.079	2.739
<i>dq3</i>	1.542	49.95	-94.656	2.905
<i>dq4</i>	1.666	47.78	-94.149	2.705
<i>sjv</i>	-4.050	60.85	6617.9	6.606
<i>mw</i>	-0.540	7.132		
<i>app</i>	0.000005	10.77		
<i>pd</i>			-61.414	16.54
<i>emp(E)</i>			-7.213	107.4
<i>pop</i>			0.022	38.91
<i>for</i>			-3568.6	2.083
			555840	35.53
<i>eld</i>			62941	38.24
<i>const</i>	-53607	35.66	91.256	266.9
Buse's R-squared for Model			0.84	
Log likelihood			-34733.5	
Sample Size			5,700	

Misc. Notes, etc., left over from past incarnations of this paper...

Nationwide, AFDC caseloads have decreased by about 18 percent since March 1994, while some states, such as

Wisconsin, Indiana, and Oregon, have seen declines of 40 percent or more. Two factors are frequently suggested as

possible causes: state-level experiments with welfare reform and strong economic growth. In this paper, we use

state-level monthly panel data from 1987 to 1996 to assess the importance of each of these factors by estimating a

model of AFDC caseloads as a dynamic function of time-dependent state welfare reform variables (welfare waivers)

and economic variables such as per capita employment. Our results from the dynamic model suggest that the decline in

per capita AFDC caseloads is attributable largely to the economic growth of states and not to waivers from federal

welfare policies. In the 26 states experiencing at least a 20 percent decline in per capita AFDC caseloads between 1993

and 1996, we attribute 78 percent of the decline to business-cycle factors and 6 percent to welfare waivers.

CA's Minimum wage and Apprehensions, 1990-99

I am looking for the series – I know it went from

The California minimum wage rose from \$4.25 to \$4.75 in October 1996 and today is \$5.75

I think we can get apps by month, but I do not have them.

	Apprehension
1990	1,169,939
1991	1,197,875
1992	1,258,482
1993	1,327,259
1994	1,094,717
1995	1,394,554
1996	1,649,986
1997	1,536,520
1998	1,679,439