



The effects of vehicle ownership on employment

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ABSTRACT

Vehicle ownership may promote work if employment opportunities and job searches are enhanced by reliable transportation. For example, vehicles may serve to reduce potential physical isolation from employment opportunities. I examine the effects of vehicle ownership and vehicle quality on employment for single mothers with no more than a high school education using National Longitudinal Survey of Youth data. I control for potential bias by jointly estimating employment and vehicle ownership in a maximum likelihood framework using state welfare eligibility asset rules as instruments. Results show that vehicle ownership increases employment. Positive effects of vehicles do not differ for urban and rural residents, but they do change with economic conditions. Further, welfare recipients are significantly more likely to exit the program and become employed if they own a vehicle.

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1. Introduction

Prior to the 1996 welfare reform act (and the preceding welfare waiver period), households were ineligible for welfare assistance if they had assets including vehicles worth more than \$1000 with \$1500 of each vehicle's value excluded from this determination. Welfare eligibility criteria began changing in the early 1990s during the pre-welfare reform waiver period, and changes continued with the 1996 Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA), which, along with placing 5-year lifetime receipt limits and work requirements on welfare recipients, formally gave states the latitude to determine their welfare program's asset limit. Most states have responded by increasing both their asset limit and their vehicle exclusion amount (or by excluding vehicles from asset calculations entirely). As a consequence, low-income households are now able to own more valuable vehicles and remain eligible for welfare.

The change in welfare asset eligibility criteria may affect employment through increased vehicle ownership. Vehicle ownership may promote work if employment opportunities and job searches are enhanced by having transportation or more reliable transportation (proxied by vehicle value). For example, vehicle ownership could expand job searches geographically, facilitate employment farther from home (or in an area inaccessible with public transportation), facilitate employment requiring unusual

or non-standard work hours that do not coincide with public transportation schedules (which may be common for entry-level jobs), reduce employee absenteeism, and reduce commute times relative to that offered by public transportation (Gurley and Bruce, 2005; Ong, 2002; Raphael and Rice, 2002).

Vehicles may be particularly important for low-income households living in inner cities. The spatial mismatch hypothesis, introduced by Kain (1968) and studied by many others (Blumenberg and Ong, 1998; Holzer et al., 1994; Ong and Blumenberg, 1998; Raphael and Stoll, 2000), suggests that inner-city residents are physically isolated from suburban employment opportunities. As a consequence, joblessness and poverty are at least partially due to inner cities having fewer employment opportunities, the jobs available in these areas requiring skills not possessed by many inner-city residents, and employers avoiding recruiting in these areas (Kasarda, 1989; Kirschenman and Neckerman, 1991; Wilson, 1987).¹ By improving accessibility to jobs, vehicles potentially reduce physical isolation from employment opportunities and promote work for inner-city residents.

In turn, increased vehicle ownership could reduce welfare dependency. Increased expenditures on vehicles, by enhancing transportation and promoting employment, may reduce welfare rolls by promoting self-sufficiency. This is particularly important in today's welfare-reformed environment with lifetime benefit limits and work requirements because those who once would have received

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¹ Others, however, argue that unemployment and poverty are largely due to racial divisions rather than spatial divisions (Ellwood, 1986; Leonard, 1987; Zax, 1990).

welfare benefits as an entitlement are now compelled to enter the labor market in spite of potential barriers (Danziger et al., 2000).

In this project, I examine the effects of vehicle ownership, as well as vehicle quality (proxied by vehicle market value and vehicle equity), on employment with National Longitudinal Survey of Youth (NLSY79) data. The effects of vehicles on employment should be important to policymakers: if such effects are positive, then liberalizing Temporary Assistance for Needy Families (TANF) vehicle asset rules potentially reduces welfare dependency, increases exits from the program, and promotes permanent welfare exits (rather than temporary ones). I estimate the degree to which vehicle ownership affects employment (and hours of work) controlling for possible omitted variable bias with a discrete factor random effects (DFRE) estimator using welfare vehicle asset rules as instruments. I also separately identify the effects of vehicles for urban and rural residents, and I investigate whether the effects of vehicles vary with local economic conditions. For each of these specifications, I estimate the models using single mothers with no more than a high school education because they are the ones most at risk of receiving welfare. Finally, I select a sub-sample of single mothers on welfare, and I estimate the effects of vehicles on the probability of exiting welfare and on the probability of becoming employed.

DFRE results show that vehicles have positive effects on employment and hours of work. Positive effects of vehicles do not differ for urban and rural residents, but they do change with economic conditions as measured by the local unemployment rate. Further, results suggest that single mothers on welfare are significantly more likely to exit the program and become employed if they own a vehicle. The remainder of the paper is as follows: Section 2 reviews the relevant literature, Section 3 describes the data, Section 4 outlines the empirical approach, Section 5 presents the results, and Section 6 discusses the results and concludes.

2. Literature review

Much of the spatial mismatch literature agrees that physical separation of low-income inner-city residents from low-skill suburban jobs (as well as discrimination in housing and limited public transportation) reduces employment and, therefore, that accessibility to jobs increases employment.² In one notable example, Rosenbaum and Popkin (1991) and Rosenbaum (1995) find that inner-city black recipients of housing assistance who move to suburban areas through Chicago's Gautreaux program are more likely to find employment than their black counterparts who remain located in inner-city public housing. In another example, Blumenberg and Ong (1998) and Ong and Blumenberg (1998) find that greater geographical access to jobs in the Los Angeles metropolitan area reduces AFDC participation and shortens commute distances to work for AFDC recipients.³ Their results predict that increasing access to low-wage jobs from the 10th to the 90th percentile of the access distribution would decrease welfare participation by over 10% (considering all races combined) and would reduce commute distances by 1.3 miles. Considering one last example, Osterman (1991) uses cen-

tract observations to show that neighborhoods with greater access to jobs have lower welfare participation rates.⁴

Focusing specifically on vehicles as a means to improve accessibility, a number of studies have examined the effects of vehicle ownership on employment for welfare recipients. For example, Gurley and Bruce (2005) estimate the effects of vehicle access on employment and welfare receipt for a sample of welfare recipients in Tennessee. They find that vehicles substantially decrease the probability of being unemployed and on welfare and increase the probability of being employed and off welfare (and increase wages, as well). Similarly, Cervero et al. (2002) examine welfare recipients from Alameda County, California, from the early 1990s and find that vehicle ownership significantly increases the probability of switching from welfare to employment. Danziger et al. (2000) find that single mothers on welfare in Michigan from the late 1990s are significantly more likely to be employed if they own a vehicle and possess a driver's license. Lucas and Nicholson (2003) find that 34 welfare participants earned more and were more likely to be employed after participating in Vermont's vehicle donation program compared to prior to program participation. Ong (1996), examining single mothers on AFDC in California from 1993–1994, finds that employment, hours of work, and monthly earnings are increasing with vehicle ownership. Similarly, examining TANF recipients from Los Angeles County from 1999–2000, Ong (2002) finds vehicle ownership increases employment. One of Ong's models in his 2002 study predicts vehicle ownership with insurance rates and population density, showing that predicted vehicle ownership increases employment by 9% points.

In addition, a couple of researchers have examined the effects of vehicle ownership on employment for respondents who are not necessarily on welfare. Raphael and Rice (2002), using 1992 and 1993 Survey of Income and Program Participation (SIPP) data, find that vehicle ownership increases employment and hours of work. Their results are robust to instrumental variables models that use state insurance premiums and gasoline taxes as instruments to predict vehicle ownership. Supplemental models show that positive effects of vehicle ownership on employment are larger for lower-skilled individuals. Using the same SIPP surveys, Raphael and Stoll (2000) find that a portion of the black–white employment gap would disappear were the same proportion of blacks to own vehicles as whites.

I attempt to build on this literature in a couple of ways. First, I examine vehicle ownership and vehicle quality, as proxied by vehicle market value and vehicle equity. This is important because older cars with higher mileage may not provide reliable transportation required for employment. Second, I use NLSY79 data, which is national, and, therefore, potentially more representative than county (Cervero et al., 2002; Ong, 2002) or state (Danziger et al., 2000; Gurley and Bruce, 2005; Lucas and Nicholson, 2003; Ong, 1996) data that may not represent the employment responses of those in other counties or states to vehicle ownership. Third, this study is the first to account for potential bias by jointly estimating the employment outcomes with the measures of vehicle ownership, modeling cross-equation correlation with a discrete factor error structure in a maximum likelihood framework using differences in state vehicle asset rules governing welfare eligibility as instruments to identify vehicle ownership. Though the literature typically acknowledges potentially biasing effects of unobserved heterogeneity, most of these studies do not attempt to control for potential bias, frequently due to data limitations.⁵ Fourth, I extend the literature by examining

² For reviews of the earlier literature, see Holzer (1991), Ihlanfeldt (1992) and Kain (1992); for a review of later studies, see Ihlanfeldt and Sjoquist (1998); for different conclusions, see Jencks and Mayer (1990).

³ Also studying work commutes, Holzer et al. (1994) and Taylor and Ong (1995) find at least some evidence that commute distance for whites is longer than that for blacks, although commute time for minorities is longer. Regardless, in support of the spatial mismatch hypothesis, Ihlanfeldt and Sjoquist (1990) and Ihlanfeldt and Sjoquist (1991) show that average SMSA commute time decreases black youth employment, Holzer and Ihlanfeldt (1996) show that black job applications decrease with employer distance from black residential areas, and Stoll (1999) finds that blacks spatially search for jobs more extensively than whites.

⁴ However, Bania et al. (2003) and Gurmu et al. (2008) specifically examine TANF recipients and conclude that the spatial mismatch hypothesis may not apply to them.

⁵ Gurley and Bruce (2005) address potential bias by regressing employment outcomes on prior vehicle access, measured in an earlier survey wave (preceding the employment measure by roughly 2 years).

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