

Welfare, Work, and Women: A Comprehensive Approach  
to the Effects of Government Assistance

by

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## **Introduction: Employment Participation as a Goal of Welfare**

“Welfare,” as Americans understand it today, refers to government assistance provided to those who are very poor.<sup>1</sup> The U.S. Social Security Act of 1935 is typically considered the foundation of the United States’ welfare system (Gordon 1994, p. 4). It established both social insurance (Unemployment Insurance and Old Age Insurance) and public assistance (Aid to Families with Children). This thesis considers only public assistance to be welfare. Welfare currently includes a combination of public assistance programs provided to low-income people as cash assistance and in-kind subsidies. These subsidies are primarily provided to women, particularly because single women, especially mothers, have been “exceptionally poor” (Gordon 1994, p. 6).

The welfare system in the United States has gone through many stages and its relationship to the labor force has evolved.<sup>2</sup> The purpose of welfare—to serve as a safety net for the poor—has remained constant since its founding.<sup>3</sup> The intention of welfare policy makers’ has been to support those who are unfit to work, including the aged, the disabled, and women with children (Gordon 1992, pp. 19-20). Many of the poorest people, however, were legally excluded from the welfare system from the 1930s to the 1970s, most notably people of color and out-of-wedlock mothers (Gordon 1994, p. 5). By the 1970s, the laws were more inclusive, while the welfare provisions were less generous and the stigma from receiving welfare was greater. This increased the number of people who were eligible for welfare.

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<sup>1</sup> The term “welfare” was not used to signify assistance to the poor until the 1960s (Gordon 1994, p. 1).

<sup>2</sup> For an in-depth description of the welfare system’s evolution in the United States see Katz (1996).

<sup>3</sup> The definition of who is poor has changed through time, but public assistance has remained means-tested relief (Katz 1996, pp. 3-10, 302-303).

Simultaneously, more women entered the labor force, leading the public to think of women more as part of the labor force. In 1950, less than 35 percent of women older than sixteen participated in the labor force (Fullerton 1999). By 1978, one half of all women were included in the labor force. In 1999, the labor force participation rate of women peaked at sixty percent (U.S. Department of Labor 2008a). The percentage of working mothers has been increasing significantly as well. Between 1975 and 2000, the labor force participation rate of mothers with children under eighteen rose from 47 to 73 percent (U.S. Department of Labor 2008b). Unemployed single women living in poverty were no longer considered to be part of the “worthy poor” when even women with children were becoming increasingly expected to work (Day 2000, p. 86). Moffitt (2006) explores this shift in perception in a public utility framework (i.e., the changing satisfaction the public receive from paying taxes towards welfare). He writes: “The increasing use of work requirements is *prima facie* evidence that voters care directly about work, for if it were merely a matter of voters becoming more conservative about redistribution, they could have instead simply reduced benefits” (p. 443).

Because recent trends in welfare policy suggest that the labor market potentially provides opportunities for upward mobility and recipients of welfare are increasingly seen as fit to work, policy makers have connected welfare to the labor market by use of explicit work incentives. Welfare laws have changed in order to reflect the changing public opinion about welfare recipients. By 1988, the government had mandated programs that provided employment training for welfare recipients to help them increase their self sufficiency and strengthen the ties between

work and welfare.<sup>4</sup> The relationship between government support and the labor market was strengthened even more with the passage of the Personal Responsibility and Work Opportunity Reconciliations Act (PRWORA) in 1996. Temporary Aid to Needy Families (TANF) replaced the Aid to Families with Dependent Children (AFDC), adding work requirements and time limits.<sup>5</sup> A major goal of this reform was to move recipients from welfare to work; thus TANF includes provisions “requiring families to make verifiable efforts to leave welfare for work” (U.S. Congress 1996).

TANF, however, is only one aspect of a broader welfare system. There is a wide variety of cash assistance and in-kind assistance programs that people with low incomes can potentially receive. Several are traditional subsidies—on a sliding scale—such as Medicaid, heating assistance, and Supplemental Security Income (SSI). Other programs—such as child care assistance and transportation assistance—may motivate employment if they reduce the cost associated with working. Most recipients of welfare use a combination of welfare programs (i.e., a “subsidy set”) (Keane and Moffitt 1998). When welfare programs are combined, their work incentives are complicated. Program participation impacts not only one’s propensity to work, but also the amount that one works and one’s earnings.

Considering that the focus of welfare laws has shifted to promoting work, this study attempts to answer the question: What program combinations might raise employment participation, hours worked, and earnings?

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<sup>4</sup> The Family Support Act of 1988 (P.L. 100-485) required all states to establish a Job Opportunities and Basic Skills Training (JOBS) program (Peterson 1996).

<sup>5</sup> There have been extensive debates about the shift in programs and its effectiveness. See Blank and Haskins (2001) for more background about these debates.

While the comprehensive welfare system has shifted towards linking employment participation to assistance, it is not obvious that work alone moves people towards self sufficiency. For the purpose of this project, I define self sufficiency as both not relying on the welfare system and being at least 150 percent above the poverty line. Although the changing laws reflect the shifting attitudes of the public towards welfare recipients' work participation, many welfare recipients have been engaging continuously or intermittently in employment without achieving self sufficiency. Prior to the 1996 welfare reform, one study showed that 92 percent of recipients mixed work and welfare at some point during their receipt of public assistance (Harrison 1978). Despite this high rate of dual participation in the labor market and welfare, welfare rolls expanded prior to the 1990s. Also, those who worked their way off of welfare often experienced poverty, causing them to cycle back onto the welfare rolls (Bane and Ellwood 1986). Additionally, those who did mix welfare and work were more likely to continue to mix than to move off the welfare rolls (Chapman, Duncan, and Gray, 1998). Thus, although employment has the potential to lead to self sufficiency, in practice, "workfare" has not necessarily proven to lead to work without welfare. Thus, this study looks beyond employment participation and hours worked in order to understand the impact of program participation on self sufficiency, as measured by earnings.

The 1996 welfare reform succeeded in decreasing welfare rolls by decreasing individual reliance on the government, yet its impact on self sufficiency is debatable. Researchers have reached mixed conclusions. Danziger *et al.* (2002), on the positive side, determine that after the 1996 welfare reform, those who left welfare for work

(supposedly achieving self sufficiency) have experienced lower poverty rates than non-working welfare recipients. Moffitt and Winder (2004), in response to Danziger *et al.* (2002), indicate that welfare recipients are less able to achieve economic self sufficiency after leaving the rolls than Danziger *et al.* had suggested. They note that the subjects in Danziger's study were receiving more assistance from family members than the average person who leaves welfare, making it seem as if they were more monetarily stable. Danziger and Wang's (2005) follow-up study to Danziger *et al.* provides a response to Moffitt and Winder's (2004) critique of their earlier study and confirms that the recipient's reliance had shifted from government to family due to stricter government regulations. Both Moffitt and Winder and Danziger and Wang agree that recipients would be more financially stable if they were encouraged to combine work and welfare (i.e., if there were work requirements, but no time limits). A reduction in program use alone does not necessarily lead to self sufficiency. Rather, researchers must also look at an individual's earnings to understand self sufficiency.

Nevertheless, despite the outcomes of "welfare to work" being unclear, policy has shifted to encourage it. Program participation in the welfare system necessarily impacts people's labor market behavior. Policy makers often focus on work incentives when reshaping welfare programs in order to reduce recipients' dependency on government aid. While most researchers consider individual aspects of the welfare system or the entire welfare system, I will focus the analysis of this thesis on understanding the impacts of welfare, as both individual subsidies and interacted subsidy sets, on employment participation, hours, and earnings. Some



programs specifically aim to increase work incentives through work requirements, time limits, and employment support. Others reduce work incentives by providing basic needs support which reduces the opportunity cost of leisure.<sup>6</sup> Yet work incentives are rarely as simple as the stipulations within certain programs because most recipients utilize government assistance as a set of payments. In this thesis I investigate how sets of subsidy programs with differing work incentives impact female participation in employment and thus potentially impact their self sufficiency.

In Chapter One, I explore theory and empirical research regarding the work disincentives and incentives of individual programs as well as how combining programs may mitigate or exacerbate work disincentive effects.

I present the data and empirical methods used in this study in Chapters Two and Three respectively. I utilize a longitudinal sample of 805 women from the Panel Study of Income Dynamics (PSID) from recent years. The PSID provides data on a range of in-kind and cash government subsidies: food assistance, housing assistance, heating assistance, TANF, SSI, Medicaid, child care assistance, job assistance, transportation assistance and clothing assistance. Thus I am able to address questions about welfare interactions and self sufficiency using longitudinal data.

In Chapter Four I discuss the results of my analysis. I provide an analysis of the impacts that non-interacted subsidies and interacted subsidy sets have on the employment rate, hours worked, and earnings of low-income working age women. Most basic needs support assistance has a negative impact on the dependent variables, but some employment support subsidies have a positive impact on them. For

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<sup>6</sup> I will explain the impacts of income and substitution effects on welfare in more depth in Chapter One.

example, combining transportation assistance with job assistance increases one's propensity to work, hours of work, and earnings more than if a recipient were only to receive these subsidies independently. Similarly, combining SSI and TANF magnifies the negative impact of receiving the individual subsidies on each dependent variable. Other sets offset the negative impact of basic needs subsidies when combined with employment support subsidies. For example, those recipients who combine housing assistance with transportation assistance or child care assistance are more likely to work and increase their earnings than if they did not combine the subsidies. Similarly, SSI recipients who receive additional support subsidies, such as housing assistance and clothing assistance, work more and earn more than those who do not combine the subsidies. Such findings indicate that the impact of subsidy programs should be studied in combination. The effectiveness of welfare policies might be reconsidered if their impacts on employment participation, hours worked, or earnings are considered as a set.

While the results indicate that certain subsidy sets might increase a recipient's employment, hours worked, and earnings, this does not allow recipients to become self sufficient under the current definition of self sufficiency. Perhaps the failure of low-income workers to become self sufficient requires a redefinition of self sufficiency to include certain government supports that reduce the costs of working. If these government supports are provided universally, as opposed to being directed towards the poor then low-income women might be more likely to achieve self sufficiency.

## **Chapter 1: Work Incentives within the Welfare System**

In recent years the welfare system has moved towards encouraging employment among its recipients through in-kind work-related subsidies and work requirements. The public has placed an emphasis on work, “not just because it is felt that the poor ‘owe it’ to society to help support themselves but because it may benefit recipients” (Jacobsen 1994, p. 15). Thus, work incentives are intended to move program recipients towards self sufficiency. However, the impact our current welfare system has on employment is highly debated. In this chapter, I outline the general debates surrounding the effects of means-tested programs (i.e., public assistance) on employment and earnings. Then I describe specific programs and the ways in which their effects might deviate from the general principle that the very existence of welfare reduces labor supply. I conclude by discussing the current study’s effort to build on previous research and capture the interaction of various subsidies in the welfare system.

### **Theoretical and empirical debates surrounding means-tested assistance**

As discussed in the introduction, the intention of welfare is to assist low-income individuals and attempt to direct them towards self sufficiency. Welfare programs are directed towards the poor through means-testing. In order to qualify for assistance, one’s income must be below a certain amount. Often, one’s income determines the amount of assistance one receives. Means-testing has a particularly interesting impact on work incentives. Some argue that means-tested subsidies create a “poverty trap” that reduces incentives to work hard which in turn reinforces recipient’s reliance on the government (Holt and Romich 2007; Wolfe 2002, Sayeed

1999). Romich *et al.* (2007) notes that as recipient's incomes increase their benefits decrease, "taxing away" their employment efforts.<sup>7</sup> This "poverty trap" is debated, however, because researchers are unable to accurately estimate the marginal tax rate (MTR) (i.e., the benefit reduction rate) (Liebman and Zeckhauser 2004). But even if the MTR could be accurately estimated, others argue that it has little impact on recipients' work efforts (Gruber and Saez 2002; Mullainathan and Thaler 2000; Romich 2006). Low-wage earners have less flexibility and discretion in their employment participation decisions, reducing their ability to respond to the MTR (Romich *et al.* 2007, Gruber and Saez, 2002). Other researchers argue that subsidy recipients of means-tested benefits may make their employment decisions based upon simplified rules that do not fully consider financial trade-offs (Liebman and Zeckhauser 2004; Mullainathan and Thaler 2000). These theoretical arguments surrounding means-testing, however, do not recognize the work incentives imbedded in the specific laws of welfare programs that are explained later in the chapter.

Economists generally categorize welfare subsidies as either basic need support or employment support. Basic needs supports are subsidies that assist in daily survival (i.e., housing assistance, food assistance, and Medicaid). Employment supports help reduce the cost of working (i.e., child care assistance, transportation assistance, and job assistance). Researchers typically agree that basic need subsidies interfere with employment participation, whereas employment subsidies are more likely to increase the probability of employment participation (Livermore and Powers 2006; Axelsen *et al.* 2007). Below, I first explain the general impacts of welfare, then

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<sup>7</sup> Sayeed (1999) studies the impact of comparable means-tested programs in Canada and notes a similar "welfare wall": when families increase their employment participation, the tax rate on their earnings increases.

explain the income effects of basic needs supports, and then I trace the more ambiguous effect of employment support subsidies.

Fundamentally welfare impacts the employment participation of its recipients because unearned income shifts the budget constraint out parallel to the budget constraint without assistance, as shown in Figure 1a. Welfare programs provide a guarantee subsidy to increase the income of the very poor. The government provides a subsidy to those who have an income below a certain point, offering recipients a guaranteed income of  $S$ . In the general welfare program, once someone earns above a certain amount, they are no longer eligible for the subsidy. This creates a large work disincentive because a recipient's income will drop from  $I$  to  $I'$  with a marginal increase in income at  $N$ . This creates an extreme notch effect at the cut-off point when welfare programs provide the same subsidy amount to everyone eligible for welfare.

Many welfare programs, however, discount the subsidy amount by a recipient's earnings, as shown in Figure 1b. This reduces the return on work as the welfare subsidy is "taxed" away at the marginal tax rate (MTR). In other words, for every dollar someone earns, their subsidy is reduced by a certain amount. Assuming that leisure is a normal good, these programs leave any worker receiving the subsidy and having any earnings at all, worse off than in the basic welfare model because this budget constraint lies on or below the budget constraint in Figure 1a.

Thus, in order to offset this earnings discount, many welfare programs have higher eligibility levels so that recipients' earnings are subsidized for higher earnings such as in Figure 1c. The well-being of recipients is difficult to compare between

Figure 1a and Figure 1c. In Figure 1a, the subsidy is more generous for additional hours of work. There are no work disincentives below an income of  $N$ , but after that point the work disincentive is great. Figure 1c, on the other hand, constantly discounts the subsidy based on earnings, but because people are eligible for some assistance even at a higher earnings level, the work disincentive is more gradual and the notch effect is less harsh.

Welfare programs like Figures 1b and 1c have both income and substitution effects. Because the basic welfare programs as shown in Figure 1a changes nonearned income, it has no impact on the wage rate, causing a pure income effect in the operant range. Thus, basic needs supports increase consumption and decrease work. As shown in Figure 2a, when someone does not participate in the labor force, their income will increase from zero to  $S$ . Their utility will increase from  $U$  to  $U'$  and their consumption will shift from 0 to  $S$ . Figure 2b shows the impact of cash assistance on someone who participates in the labor market before the program but subsequently reduces their hours. Figure 2c shows someone who stops participating in the labor market due to the impact of cash assistance on the budget constraint. Depending on a recipient's utility curves and the size of the subsidy,  $S$ , she will definitely decrease her hours and might even exit the labor force such as in Figure 2c. Their hours spent working will shift from  $L$  to  $L'$  while their consumption increases from  $X$  to  $X'$ .

Employment support subsidies are more likely to cause both substitution and income effects because they have an impact on the effective wage. For example, child care assistance increases recipients' relative wages because recipients have

higher net earnings if the cost of child care is not deducted from their earnings than non-recipients who need to cover the cost of child care. When one's wage increases, the substitution effect increases the opportunity cost of leisure, mitigating the income effect of the basic welfare subsidy. But the wage change increases one's potential income causing an income effect. Recipients will increase consumption, but the impact on hours worked is dependent upon the size of the subsidy and one's utility function. Depending on the relative size of the income and substitution effects, their hours worked might increase or decrease, as shown respectively in Figures 3a and 3b. The income effect can be found by imagining the impact of increasing a recipient's income from  $C_{max}$  to  $M'$  while holding her wage constant until her utility shifts from  $U$  to  $U'$ . Her consumption unambiguously increases from  $C_x$  and her leisure shifts from  $L_x$  to  $L_m$ . The income effect is shown as  $\Delta L_I$ . The substitution effect is found by holding utility constant at  $U'$  and shifting the original budget constraint to be tangent to  $U'$  by adjusting her relative wage. Her consumption, again, unambiguously increases, but her leisure shifts from  $L_m$  to  $L'_x$ . The substitution effect is shown as  $\Delta L_S$ . Her overall change in leisure is  $\Delta L$ , found through summing the substitution effect and the income effect. She will consume  $C_x'$  and spend  $L_x'$  in leisure.

In addition to the work incentive and disincentive principles involved in receiving different types of assistance, certain programs have additional regulations and work requirement. Because states have significant autonomy over their welfare rules, the federal regulations do not always predict the work incentives involved in welfare laws. States have a significant amount of autonomy over programs,

determining the regulations, quantity, quality and accessibility of their support. This complicates the figures that outline basic welfare programs.

In addition to state variation, the impact of subsidies is not typically as “clean” as the labor model predicts. Most of the literature on welfare and work incentives is about specific programs. Each program is important to understand because its rules and regulations provide recipients with certain basic needs and work support impacting their employment decisions.

The subsidies that are discussed in the following sections of the chapter—food assistance, housing assistance, heating assistance, TANF, SSI, Medicaid, child care assistance, job assistance, transportation assistance, and clothing assistance—are taken up in order by the reported utilization rates in the data used in this sample. First there is a description of the program’s rules and regulations, followed by a theoretical discussion of possible work incentives and disincentives, and then researchers’ findings regarding any incentives or disincentives. The utilization rate does not necessarily indicate the marginal impact these subsidies have on recipients’ employment participation rates and earnings, but it does indicate their possible availability and frequency of take-up. Table 1.1 compares the utilization rates of the programs in this sample to the national utilization rates. Except for Medicaid, the utilization rates are relatively similar.



Program	National (percent of women between the age of eighteen and 65 below the poverty line) (CPS 2006)	Sample (% of women between the age of eighteen and 65 below 150 percent of the poverty line in all years in sample)
Any means-tested assistance	59.3%	49.4%
Food assistance (excluding free-lunch)	35.1%	33.1%
Housing assistance	17.8%	19.5%
Heating assistance	N/A	11.2%
Cash assistance <sup>8</sup>	21.0%	14.3%
Medicaid	51.8%	5.3%
Child care assistance	N/A	5.3%
Job assistance	N/A	3.4%
Transportation assistance	N/A	2.3%
Clothing assistance	N/A	0.6%

### Food assistance

The most widely used subsidy in the United States' welfare system is for food. Able-bodied women in this sample who receive food assistance from the government utilize the Food Stamp Program.<sup>9</sup> Food stamps are provided to households with resources and income below a certain threshold. Although the Food Stamp Program is a federal program, because food stamps are distributed at a local level, certain variations exist between offices.

In 1996, policy makers reformed the Food Stamp Program through the Personal Responsibility and Work Reconciliation Act (PRWORA) to include some work incentives. Some of the stipulations impact the eligibility of the population in this study. Able-bodied adults without dependents could only receive food stamps 3

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<sup>8</sup> Cash assistance, in this study, is comprised of TANF and SSI. The broader definition used by the Current Population Survey might include a wider range of cash assistance such as the Earned Income Tax Credit. This, however, is not clear.

<sup>9</sup> There are several other food assistance programs available through the government, but only children and disabled individuals are eligible for them. This sample only asks questions about food stamps.

out of 36 months if they were not working at least twenty hours per week. In 1997, Congress allowed states to exempt fifteen percent of able-bodied adults without dependents from this time limit.<sup>10</sup> In addition, recipients face a benefit reduction rate so that as their earnings increase the amount of food stamps they receive decreases. Also, some states have Food Stamp Programs that allow recipients to deduct portions of their income from their reported earnings to cover the cost of child care and other work-related expenses in order to increase eligibility (Work World 2008). These changing stipulations added limitations to the program which are loosely tied to work.

Theoretically, entitlement-based programs, such as food stamps, create work disincentives because they provide a guaranteed amount of income for anyone earning below a certain threshold. Thus, Rector (2001) argues that food stamps still create a dependency that allows people to reduce their effort in the labor market in order to receive additional government assistance. The benefit reduction rate increases the disincentive to earn more.

But, food stamps could also be positively tied to productivity. Because food stamps participation is often correlated with food insecurity, food stamps can increase people's health and well-being, providing them with the potential to be more productive. In addition, the earnings disregard in some states reduces the impact of the work disincentive from the benefit reduction rate. Depending on the size of the earnings disregard and an individual's utility, this will increase eligibility, and has an ambiguous effect on employment.

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<sup>10</sup> Additionally, most legal immigrants were ineligible to receive food assistance. However, the Farm Bill of 2002 altered some of the stipulations placed upon the food stamp program. Some immigrants who had been in the U.S. for at least five years could apply for food assistance (U.S. Department of Agriculture 2008).

Most of the research on the impact of food stamps on labor force participation, however, finds work disincentives. Fraker and Moffitt (1988) conducted one of the first studies that measures the impact of food stamps on employment participation among female-headed households. They estimate that food stamps reduce the employment rate by about nine percent. Changes in the program's structure, such as altering the guarantee benefit rate, had a limited marginal impact on hours worked, decreasing them by about one hour per week among those women who chose to work. Hoynes and Schanzenbach (2007), using data from before the 1996 welfare reform, find an even larger negative impact on hours worked. They note reductions in hours of work of up to sixteen percent as well as negative reductions in employment, earnings, and income among food stamp recipients.

No studies recognize food stamps as increasing labor force participation, but a few authors are unable to substantiate significant relationships between food stamp receipt and employment participation. Hagstrom (1996) focuses on married couples with limited liquid assets and concludes that few couples would adjust their labor market behavior to become eligible for benefits. Huffman and Jenson (2005) publish one of the only studies that uses data after the Food Stamp Program was reformed under PRWOWA. They study the relationship between food stamps, food insecurity, and labor force participation among low-income, single, working aged women and do not find any statistically significant relationship between food stamps and labor force participation (p. 1109). Although they are in the minority, these authors determine that food stamp program participation does not impact employment decisions.

## **Housing assistance**

Housing subsidies for low-income households come in many forms with varying restrictions, including: Public Housing, which are units rented from Public Housing Authorities (PHAs); Section 8 Tenant-Based Vouchers and Certificates, which are private-market rental vouchers distributed by PHAs; and Project Based Section 8 Certificates, which are rental units in the private market subsidized by PHAs. To be eligible for housing assistance, a household's income must be in the bottom fifty percent of household median income in any given metropolitan statistical area (Fischer 2000). Housing assistance recipients pay one-third of their monthly income towards rent and the PHAs pay the remaining amount. The cost of an apartment is determined by the fair market rent. The size of the unit is determined by the number and sex of children.<sup>11</sup> A limited amount of money is allotted to PHAs to subsidize housing for individuals who apply. Only about thirty percent of poor renters receive government housing subsidies (Susin 2002). Individuals who apply for housing assistance are added to a waiting list of eligible households.<sup>12</sup> As the cost of housing increases and the available housing stock decreases, waiting periods become much longer (Susin 2002). Once households receive this assistance, they are allotted a subsidy until their incomes are high enough to pay rent in the private market. Recipients of public housing are never forced to move out of their unit, despite their income. Rather, they are more likely to choose to move out of

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<sup>11</sup> Children's sex play a role in the size of a subsidy because children are not expected to share a room with a sibling of a different sex, but two children of the same sex are required to share a bedroom (Housing and Urban Development, 2008a).

<sup>12</sup> Under certain circumstances PHAs can prioritize certain households, such as when households live in substandard housing, when households have been involuntarily displaced, or when households pay more than fifty percent of their income on rent. (Fischer 2000).

subsidized housing if they begin to earn enough because paying thirty percent of their income will be above the fair market rent (Fischer 2000).<sup>13</sup> Section 8 recipients can earn up to a certain amount before losing their vouchers. Thus, the impact of work disincentives in housing assistance is difficult to measure because the subsidy amount changes based on the location and size of a household.

Because of the high marginal tax rate on housing subsidies, policy makers are concerned about work disincentives. But the correlation between lower working rates and housing assistance does not appear to be a result of housing assistance. Rather, those who are eligible for housing assistance are individuals who are less likely to participate in the labor market (Blank and Riccio 2001). The fact that recipients of housing assistance tend to be less likely to be employed is due, in part, to the impact of long waiting lists. Individuals who are less needy or who experience shorter periods of poverty are often no longer eligible for housing assistance by the time it becomes available to them, leaving housing subsidies for a financially needier population. However, Fischer (2000) argues that long waiting lists increase the incentive to maintain a low income in order to remain eligible for subsidies.

However, although the regulations on housing assistance do not explicitly include work incentives, some argue they are embedded in their receipt. For families living close to the poverty line, housing is extremely important to secure in order to maintain a job. Additionally, stable affordable housing helps minimize relocation, which harms one's ability to maintain employment (Sard and Daskal 1998). This

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<sup>13</sup> Currie and Yelowitz describe this phenomenon, writing, "It is possible for a millionaire to live in the projects, but she would have to pay thirty percent of her income towards rent. The tax rate and rent payment associated with it, rather than the income limit, is the reason why very few wealthy households live in the projects" (1998, p. 7).

assistance and burden reduction still has incentives for PHAs to assist recipients in obtaining work. Because PHAs are funded, in part, by recipients' incomes, PHAs have incentives to assist people in accessing and stabilizing work (Sard and Daskal 1998). Some PHAs provide residents with work incentives by reducing the amount their rent increases as their earnings increase when they participate in welfare to work opportunities (Bell and Gleason 1999). Other PHAs have the Family Self-Sufficiency program. This program began in 1990 and provides services to families that receive housing assistance and choose to participate. The program assists individuals in gaining and maintaining employment (U.S. Department of Housing and Urban Development 2008b).<sup>14</sup> Thus housing assistance might mitigate the economists' hypothesis about work disincentives of non-work support assistance.

Yet, some researchers have found that housing subsidies have a substantial negative impact on labor force participation. Using the PSID, Fischer (2000) concludes that both labor force participation and hours worked decreased among women after their household began receiving housing assistance.<sup>15</sup> Painter (2001) considers housing subsidies as part of a greater welfare package. When considering the impact of being on the waiting list and receiving assistance, he indicates that housing assistance reduces recipients' work by over twenty percent more than welfare packages without housing assistance. Currie and Yelowitz (1998) agree that those who receive assistance and those on the waiting list have a large work disincentive, but that the disincentive is exaggerated because housing subsidies are combined with

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<sup>14</sup> Individuals who utilize Family Self Sufficiency program most likely report this as job assistance. I have explained it within housing subsidies because it is run through PHAs.

<sup>15</sup> Fischer also notes that households utilize more government assistance while receiving housing subsidies than before their receipt of housing subsidies.

other means-tested entitlement subsidies. Olsen *et al.* (2005) use data from after the 1996 welfare reform and determine that each housing subsidy has a substantial negative impact on market work, reducing earnings of recipients by at least thirty percent a year. Yet Olsen *et al.* point out that this impact on earnings has slowly diminished in more recent years. Susin (2005) provides a more conservative estimate that housing subsidies reduce recipients' earnings by about fifteen percent.

On the other hand, many researchers argue that housing subsidies have minimal to positive impacts on labor force participation, especially when combined with work incentive programs. These work incentives vary based on the types of housing assistance. Blank and Riccio (2001) note that recipients of subsidized housing in certain parts of the country have had a more difficult time finding jobs and leaving welfare than residents living in unsubsidized housing. The authors do not cite housing subsidies for recipients' difficulty in participating in the labor force and leaving welfare, but rather, suggest that it might be mostly a combination of personal factors of those in subsidized housing. They also indicate that public housing recipients benefit more from welfare-to-work programs than residents of subsidized housing, but their level and quality of employment is not enough to diminish dependency.

Using California data, researchers Paul Ong and Evelyn Blumenberg (1998), determine that recipients of Section 8 vouchers are more likely to work than welfare recipients and private owners. They argue that job accessibility plays a more important role in labor market participation than access to government handouts. They suggest that rather than creating incentives within the welfare system for

employment, Section 8 vouchers increase housing mobility for the poorest families, providing greater access to jobs.

Olsen *et al.* (2005), using U.S. Department of Housing and Urban Development longitudinal data, is the first paper to study the impact of the Family Self-Sufficiency program. They conclude that although housing subsidies reduce recipients' earnings, the Family Self Sufficiency program increases earnings. Recipients who combine housing assistance with the Family Self Sufficiency program are most likely to have higher earnings and labor force participation than recipients who those who do not combine this assistance. However, participation is limited to interested households and biased towards families who want to increase their employment participation, which most likely indicates their propensity to work.

Still other researchers find that housing subsidies have no statistical impact on labor market participation. Using panel survey data of working age single women, researchers Corocan and Heflin (2003) are unable to substantiate a relationship between housing assistance and changes in weekly earnings, the percentage of months spent working, or the percentage of months on welfare. Lee *et al.* (2005), using survey data from Indiana and Delaware, find that housing assistance does not interfere with fulfilling the intentions of the 1996 welfare reform to increase earnings and employment while decreasing dependency. Families receiving housing assistance and non-recipients alike have equally increased earnings and employment and decreased dependency on welfare. Harkness and Newman (2006) agree that labor force participation and employment are not impacted by housing subsidies. Looking at data from before and after the 1996 welfare reform, they determine that



the employment rate of single mothers increases as much for recipients of housing assistance as for non-recipients. Heintze *et al.* (2002) look at single mothers after the 1996 welfare reform and note that housing assistance increases housing stability, which directly increases the probability of working. Yet, when housing stability is instrumented for, they determine that the net effect of housing assistance is statistically insignificant. Thus, we see that the impact of housing subsidies on labor force participation is debated and unclear.

### **Heating assistance**

Most of the heating subsidies are distributed through the Low Income Housing Energy Assistance Program (LIHEAP), which was created by the U.S. Department of Health and Human Services in response to the energy crisis in the 1970s.<sup>16</sup> Energy assistance is a means-tested federal program that targets the neediest population. Households are eligible if their income does not exceed 150 percent of the poverty line. Approximately two-thirds of LIHEAP recipients have an income of less than \$8,000 per year. These subsidies come from block grants distributed to states based upon relative cold and hot weather for low-income households (The Campaign for Home Energy Assistance 2005).

LIHEAP has no specific work requirements. This subsidy has limited funding, so not all who are eligible receive assistance. Both higher energy costs and larger families increase the likelihood of receiving heating assistance.

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<sup>16</sup> The PSID asks respondents specifically about heating assistance as opposed to the general energy assistance provided through LIHEAP.

LIHEAP is a relatively small program that receives virtually no attention from scholars. The debate surrounding LIHEAP includes no notable discussion of energy assistance's impact on labor force participation. One would expect recipient's work incentives to decrease due to the income effect of this assistance. However, those who cannot afford to pay their home energy bill are at higher risk for serious illness and injury, especially young children and elderly individuals (U.S. Department of Health and Human Services 2006). Thus, energy assistance could increase productivity among those in need.

### **Temporary Aid to Needy Families (TANF)**

TANF is run by the Office of Family Assistance through the U.S. Department of Health and Human Services. It replaced AFDC in 1996 through the Welfare Reform Law of 1996 and was reauthorized in 2006. The law relocated the autonomy of welfare laws to the state level, providing only general guidelines for the allocation of block grants provided by the federal government. TANF has four major goals: "assisting needy families so that children can be cared for in their own homes; reducing the dependency of needy parents by promoting job preparation, work and marriage; preventing out-of-wedlock pregnancies; [and] encouraging the formation and maintenance of two-parent families" (U.S. Department of Health and Human Services, 2007). Eligibility is determined through means testing. Family size determines the net income per month that a household may receive.

In order for this cash assistance to change in its status from an entitlement to temporary assistance, the federal government established work requirements and time

limits. Recipients are required to participate in at least thirty hours of work per week, must work when they are “job ready,” and cannot receive welfare for more than a total of five years in their lifetime.<sup>17</sup> There are very few exceptions to these requirements. However, state governments cannot penalize single parents for failing to fulfill these work requirements if they cannot find adequate child care.

Beyond punitive stipulations, the welfare system attempts to reward work. Recipients’ earnings are discounted at fifty percent towards one’s benefits based on federal law. For example, a single parent of one child who makes \$400/month will be discounted only \$200/month. If this family is eligible for a maximum of \$316 of assistance per month, they will receive \$116 in TANF benefits in a given month (Neighborhood Legal Services Association 2008). By 2004, states were required to have fifty percent of all families and ninety percent of two-parent families working (U.S. Department of Health and Human Services 2007).

There are few theoretical arguments that TANF reduces work incentives relative to AFDC because of its employment requirements, time limits, and earnings disregards. Nevertheless, as a means-tested benefit, TANF does have a positive income effect and a negative substitution effect on work. Even those who theorize that any government assistance will reduce labor force participation among recipients typically agree that the work incentives reduce the impact of the subsidy’s work disincentives. Families who move from no work to part-time work at minimum wage, from part-time to full-time work at minimum wage, or from full-time work at minimum wage to full-time work at a higher wage, increase their households’

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<sup>17</sup> Each state can impose requirements and exceptions to these rules. However, this serves as a general guideline set by the federal government.

income. This is because TANF has a large enough earnings disregard that the amount of assistance does not decrease enough to offset a family's higher earnings.

Additionally, time limits serve as major work incentives because assistance is limited. Some forward-looking individuals might not want to use their entire subsidy at the present time for fear of future need (Acs *et al.* 1998).

Most researchers agree that the work incentives in TANF are explicit and effective. Not only are more recipients working since its passage, but the number of welfare cases has dropped significantly and employment among those who leave welfare has increased (U.S. Department of Health and Human Services 2000). Many researchers credit this employment increase to the work incentives imbedded in TANF. Even Blank (2000), who is critical of TANF, agrees that the increase in low-skilled workers' employment participation is a result, in part, of the welfare reform.<sup>18</sup>

However, some authors' findings are critical of the impacts of TANF's work incentives. Huffman and Jensen (2005) link participation in TANF to significant work disincentives. Holding personal characteristics and food stamp participation fixed, they find that recipients are less likely to be employed if they receive TANF than non-recipients. In a later paper Huffman and Kilkenny (2007) study the impact of TANF on labor force participation in more detail through regional variability. Using census data, they find that variation in reduction rates in welfare programs across the country yields very little difference in employment behavior among recipients. In other words, the varying work incentives do not impact the

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<sup>18</sup> She warns that the welfare reform is only part of a larger picture which also includes economic expansion and expansion of other programs that support work such as child care assistance. Thus, it is difficult to separate the effects of the different influences.

employment rate of TANF recipients. This limits the ability of policy makers to minimize the work disincentives of cash assistance (Huffman and Kilkenny 2007).

But, most researchers agree that TANF has a positive impact on employment participation. Fang and Keane (2004) published an extensive study looking at changes in welfare from 1980 to 2002. They argue that the work requirements and time limits of TANF accounted for 66 percent of the 23-percentage-point drop in welfare caseloads. But they do not argue that the drop in caseloads due to work requirements necessarily indicates that those who left welfare are moving into the labor force, noting that one-third of those who leave welfare do not become employed. Even Blank (2004) who criticizes Fang and Keane's study for attempting to "fully specify a behavioral process," points out that that women on welfare's labor force participation rose by over twenty percent from 1990 to 1999 (p. 98). Finally, states with welfare programs that have either higher earned income disregards or lower reduction rates have higher employment rates among recipients, indicating the positive impact of employment incentives (Huffman and Jensen 2005).

Although greater numbers of welfare recipients have returned to work under TANF than under AFDC, many of those who have returned to work have had relatively unstable employment. The work incentives within TANF rarely provide households with the means to move beyond poverty (Strawn, Greenberg, and Savner 2001). Thus, TANF does not assist perfectly in moving recipients towards self sufficiency.

## **Supplemental Security Income (SSI)**

SSI is a cash subsidy from the Social Security Administration designed to help low-income elderly, blind, and disabled individuals meet their basic needs. SSI, relative to other programs, offers the largest average benefit, about \$545 per month in 2004, to its recipients because the recipients are least capable of participating in the labor force (U.S. Social Security Administration 2007a; Moffitt 2002). Applicants under 65 years of age who are medically determined to be unable to engage in “substantial gainful activity” are eligible for SSI (Muller *et al.* 1996, p. 22). Additionally, low-income elderly individuals over the age of 65 can qualify for SSI if they have limited assets (U.S. Social Security Administration 2007b). Individuals can receive other government subsidies and still be eligible for SSI (U.S. Social Security Administration 2008b). The federal government allots a maximum amount per recipient each year, which some states choose to supplement.

Some theorists note that SSI still has work disincentives despite targeting people unable to participate in substantial gainful employment. Individuals who have disabilities but might still be able to participate in work activities have less incentive to do so (Muller *et al.* 1996). Additionally, low-income elderly people are more likely to retire at a younger age than they otherwise would in order to qualify for elderly SSI (when they reach the age of 65) (Neumark and Powers 2005).

However, because SSI is geared towards those who are unable to work, lawmakers have not been particularly concerned with any labor force incentives in SSI. But, because certain disabilities are not totally debilitating, SSI does have some work incentives for program participants. SSI is only reduced by half of the amount earned

through work after \$65. Students who are under 23 may discount their earnings more significantly. Additionally, any extra work-related costs resulting from one's disability are subtracted from earnings in determining continued eligibility. In addition, in 2002, the Social Security Administration implemented a voluntary work-incentive program for employment support for blind and disabled recipients (U.S. Social Security Administration, 2006).

Despite SSI recipients' disabilities, a significant portion of them engage in work. Among working age recipients who had received SSI for at least a year, almost one quarter had some earned income (Muller *et al.* 1996). According to Muller *et al.* the employment rate of SSI recipients is more likely connected to a recipient's disability than to the work incentives in SSI. Compared to those with developmental disabilities (such as retardation), those with physical and other non-developmental disabilities are much less likely to engage in work-related activities (Muller *et al.* 1996).

Researchers have paid little attention to the SSI's program work disincentives, probably because providing a safety net for elderly and disabled citizens is less controversial than providing assistance to younger able individuals. Neumark and Powers (2005), however, discuss work disincentives of SSI that impact the aging population. In order for elderly people to qualify for SSI they must earn below a certain income threshold. Potential recipients often reduce their earnings in their early sixties, before retirement, in order to qualify for this assistance. Neumark and Powers find a statistically significant work disincentive effect on low-income workers around the age of 62.

## **Medicaid**

Medicaid is the primary program that provides medical benefits to low-income people who do not have access to adequate health insurance. Medicaid expanded in 1987 to include low and moderate income households (Meyer and Rosenbaum 2000). Prior to this shift, only the medically needy and/or those receiving AFDC, SSI, or transitional Medicaid<sup>19</sup> received this form of public health insurance. The federal government sets general guidelines, but program requirements are set by individual states. Currently, working age women who are eligible for Medicaid include individuals who are eligible for TANF, or who are pregnant and at or below 133 percent of the poverty line, or who are low-income mothers whose children are under eighteen, or who have breast cancer, cervical cancer or tuberculosis. Medicaid typically covers inpatient and outpatient hospital care, screenings, lab work, physicians, dentistry and nurses services, pregnancy related services, home health-related services, and medicine (U.S. Department of Health and Human Services 2005). With the expansion of Medicaid, many states now require that recipients participate in cost sharing in the form of co-payments, which increases out of pocket expenses for recipients. Some states have a limit on the maximum co-payment and allow recipients to deduct co-payments from earnings (Bogart 2005). The program pays medical providers directly for medical care.

Medicaid has no specific work requirements. Most Medicaid recipients who work do not work jobs that provide benefits. For the recipients of Medicaid, this indicates relatively low job stability and quality. States with co-payments generally

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<sup>19</sup> Transitional Medicaid is health insurance offered to people for the first six months after they have left public assistance for work.



expand their eligibility limits because individuals with slightly higher earnings, who deduct their co-payments, become eligible for Medicaid. This increases the Medicaid income limit.

However, as a means-tested subsidy, Medicaid can negatively impact labor. Like all means-tested assistance, once households earn above a certain income, they are no longer eligible to receive Medicaid. Although these notches are relatively high, they reduce the incentive for recipients to increase earnings beyond a certain point (Holt and Romich, 2007). This is especially important among households facing employment opportunities that would allow them to gain higher earnings without health benefits from their employers.

Despite the general work disincentive present in welfare, Medicaid potentially increases work activity. This is because receipt of health insurance has the potential to increase labor force productivity. Yelowitz (1995) explains,

“First, poor health lowers the worker’s marginal product and hence the wage an AFDC recipient could earn, potentially reducing labor supply. Second, those in poor health will have a greater marginal disutility of work, or steeper indifference curves, again potentially reducing labor supply” (Montgomery and Navin (2000) ref. Yelowitz, p. 5).

Medicaid has the potential to reduce health problems, potentially increasing one’s capability to participate in the labor force and/or work longer hours.

Additionally, when Medicaid expanded to include coverage for children in low-income households, it severed the ties between AFDC and public health insurance. This allows households to work more and still qualify for public health

insurance. Yelowitz (1995), as well as Meyer and Rosenbaum (2000), argues that because Medicaid is insurance, rather than a traditional in-kind handout, it does not change the opportunity cost of leisure. The expansion of Medicaid, therefore, should never decrease work incentives. Because working poor often do not have access to private health insurance, Corocan *et al.* (2000) describe the expansion of Medicaid as increasing the payoff for work. Although the expansion of Medicaid may cover more working families, it does not necessarily encourage Medicaid recipients to work more. At the same time, higher income requirements do not penalize recipients from increasing their earnings up to a certain amount.

Because most of the research on Medicaid occurred prior to its expansion, when Medicaid recipients were also AFDC recipients, most researchers agreed that the two programs worked together to create a work disincentive (Moffitt and Wolfe 1992; Winkler 1990). Montgomery and Navin (2000) use several methods to analyze Current Population Survey data from before the expansion of Medicaid. They conclude that either with or without controls for state heterogeneity, Medicaid eligibility thresholds had no impact on labor supply. Increasing Medicaid expenditures, however, had a negative impact on the probability of work and the hours recipients spent working.

Blank's (1989) results potentially counter Montgomery and Navin's. She establishes a relationship between health and hours spent in the labor market. Using a state-specific average, Blank determines that those who utilize Medicaid because they have special medical needs are, indeed, less likely to work than those who do not use Medicaid. She indicates that if Medicaid expands to low-income individuals before

their health status becomes disabling, then it would increase their employment rates. This prediction is reflected in the findings of more recent studies.

Although relatively little research has been done on the relationship between Medicaid and work incentives after its expansion, most researchers who discuss post-expansion Medicaid find a positive impact on labor force participation. Yelowitz (1995), using March Current Population Survey data on women with children under fifteen, finds that when the income eligibility of Medicaid was raised to include households with slightly higher incomes, ever-married women increased their labor force participation while never-married women had negligible changes in their labor force participation. Ham and Shore-Sheppard (2005), however, argue that Yelowitz's data cannot be used to establish a relationship between labor force participation and Medicaid income because he places restrictions on his model that are not supported by theory or data, and because his income eligibility test for welfare is not comprehensive. Because of the expansions of Medicaid to non-welfare families at or near the poverty line, Meyer and Rosenbaum (2000) argue that access to public health insurance makes work more attractive to those newly eligible families. Medicaid has work incentives for those who are eligible, while its impact on those on the margin of eligibility is still debated.

### **Child care assistance**

Congress created the Child Care and Development Fund with the passage of PRWORA in 1996. It provides a block grant to states to fund their child care subsidy programs. States use most of the funds to provide either child care vouchers or slots

in contracted child care centers for low-income working families. Additionally, a certain portion of the grant must be set aside to improve child care services. Up to thirty percent of a state's TANF funding can be allocated directly into the Child Care and Development Fund to supplement the federal grant. Each state designates its own requirements for eligibility. However, there are certain federal guidelines states must follow. Eligible families must typically have a child who is under thirteen years of age.<sup>20</sup> Also, families cannot earn an income above 85 percent of the state's median income. Because not all families which are eligible for child care subsidies can obtain the assistance because of limited funding, priority is given to "very low-income" families and children with special needs (U.S. Department of Health and Human Services 2008a).

The intention of the child care subsidy is to encourage work. These programs target low-income families so that they can participate in the labor market (either through work or employment preparation). In all states, recipients are required to be working or attending education/training. Some states have a welfare guarantee which eliminates any waiting lists, giving families an effective entitlement to child care assistance. Some states (several of which also have child care subsidy guarantees) also have co-payment rules which require families to contribute a portion of their income towards child care (Danziger *et al.* 2001). Co-payments are based on family size, annual income, the number of children who receive care, and the number of hours they receive care (Adams 2008). This helps guarantee that those who are utilizing the subsidy are participating in the labor market and need the subsidy.

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<sup>20</sup> Exceptions are made for children with special needs.

Because the function of child care assistance is to reduce the effective cost of employment, there are very limited discussions regarding how child care subsidies might function as a work disincentive. Yet, as with all means tested subsidies, there is a notch effect where recipients lose their benefits when their income goes above a certain level, creating a certain income bracket where increased labor market participation reduces one's effective earnings.

But researchers typically understand child care subsidies as increasing one's propensity to work. There is a general conclusion that mothers' labor force participation is sensitive to the cost of child care arrangements. The Child Care and Development Fund has set long term goals of decreasing the number of families who face child care as a barrier to work. Meeting these goals ought to increase labor force participation because low-income, single mothers report that their likelihood to work is impacted by their access to child care (Mason and Kuhlthau 1992; Meyers 1993).

Thus the impact of child care subsidies is often viewed as positive, though a few scholars challenge the extent of child care assistance's impact on labor force participation because of limited access and availability. Gennetian, *et. al.* (2004) argue that because child care subsidies are limited and meager, they only have small effects on employment-related child care problems.

But researchers agree, in general, that the receipt of child care subsidies increases employment among single and married women and also reduces the amount of time households are reliant on cash assistance leading to self sufficiency. Child care subsidies directly lower the cost of child care. Lower child care costs for both single and married mothers increase the probability of work force participation by

increasing the net wage (Powell 2002; Michaelopolos and Robins 2002; Han and Waldfogel 2001). Han and Waldfogel (2001) indicate that if child care costs were reduced by 25 percent, or one dollar an hour, employment of mothers would increase from 3 to 21 percent. Danziger *et al.* (2001) credit child care subsidies for increased employment of single mothers. Meyer and Rosenbaum (2001) looked at the impact of child care expenditures, welfare policy, Medicaid policy, job training, and EITC before 1996 on the employment of single women. They credit child care expenditures with a four to seven percent increase in single mothers' employment levels between 1984 and 1996. Axelson *et al.* (2007) note that not only do child care subsidies increase employment among women, but they also reduce their reliance on TANF. Similarly, Ficano *et al.* (2006) note that child care subsidies are linked to shorter unemployment periods, reducing periods of welfare receipts. Bainbridge *et al.* (2000) links the amount of spending on child care subsidies to the amount that employment increases. They find that for single mothers with young children, higher spending on child care subsidies has a statistically significant and positive impact on their employment.

Child care subsidies function as employment support, which has both income and substitution effects which cause a theoretically ambiguous response in leisure. However, most researchers on child care subsidies finds that they have positive and lasting effects on employment rates. Additionally, these higher child care subsidies may cause an additional positive feedback in creating jobs for the same type of people to which they provide child care assistance. There appears to be increased employment and reduced parental/family care. As child care subsidies increase,

employment increases, and center-based care increases. This, in turn, creates more employment opportunities (Tekin 2005).

Despite the impact of child care assistance on employment, according to some researchers, recipients are not likely to be more self sufficient. Danziger *et al.*(2001) links child care assistance to an increased likelihood of employment, but not to reducing the likelihood of single mothers to experience poverty. Women are unable to earn enough to keep them out of poverty and remain above the eligibility threshold for child care assistance.

### **Job assistance**

There are many different types of job assistance provided both by the federal government and by state and local groups.<sup>21</sup> For example, the federal Job Opportunities and Basic Skills trainings program provided job placement and skills to welfare recipients before PRWORA. The Worker-Trainee Program is a federal job assistance program that provides training in marketable skills and entry level government jobs to low-skilled, unemployed individuals. Some welfare offices create community service job opportunities for recipients (U.S. Department of Health and Human Services 2008b). Job assistance is not always means-tested. Rather it is available based on availability, applications, and interest. After the passage of PRWORA, the “work-first” mentality brought forth many job assistance programs through local welfare offices. It is, therefore, generally difficult to differentiate the effects of TANF from the effects of job assistance. Blank (2002) notes that almost all

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<sup>21</sup> Note that Family Self Sufficiency program is a type of job assistance organized through Public Housing Authorities described under housing assistance’s work incentives.

of the voluminous research done on welfare-to-work efforts agrees that welfare-to-work programs increase labor force participation relative to welfare programs that do not mandate work. Only the size and impact of the effect differs across studies.

Job assistance is intended to be an employment incentive. There is virtually no debate contradicting this. The only potential negative impact job assistance might have on labor force participation statistics is that when individuals are going through job training, they are unlikely to participate in the labor force. If studies examine the employment rate or number of hours that recipients worked while receiving assistance, job assistance might appear to lower them, although it might increase employment and hours worked after recipients receive assistance.

The empirical findings suggest limitations in the theoretical predictions. Hsiao *et al.* (2007) study the effectiveness of job assistance in Washington State. They determine that, although job assistance is helpful in the first round for those who are unemployed, the programs do not significantly impact the probability of employment for repeaters. In other words, among those who participate in job assistance programs unsuccessfully (either do not find a job or have cycled back into unemployment), further job assistance is ineffective in assisting individuals in gaining employment. But Hsiao *et al.* (2007) contradict Hsiao's earlier study, determining that repeating job training programs in Washington State has a positive and statistically significant impact on hours worked, though not on wages.

Finally, although welfare-to-work programs increase labor force participation, the lasting results of this increase on recipients are questionable. Blank (2002) worries that there are a shrinking number of welfare offices that participate in



improving employment related skills. This changing trend might limit recipients' earnings, and, in turn, their ability to move out of poverty.

### **Transportation assistance**

Transportation assistance helps welfare recipients and other low-income workers travel to their workplaces. Some smaller local programs also offer transportation assistance for those with disabilities to go to doctors' appointments. Transportation assistance that provides the working poor easier access to their jobs undoubtedly provides work incentives, but there is very little discussion of this in the economic literature. Axelson *et al.* (2007) argue that theoretically, transportation assistance reduces the cost of working, thus providing work incentives. Sanchez *et al.* (2004) find that those with access to transportation are more likely to participate in the labor market. They argue that transportation assistance must be expanded in order to reduce the cost of working. There is relatively little discussion about transportation subsidies outside of these articles.

There is no notable discussion of transportation assistance's causing a work disincentive in economic literature. Like all work-support programs, however, transportation assistance might reduce work incentives for individuals whose earnings are at or near the eligibility margin.

### **Clothing assistance**

The federal government provides clothing assistance mostly in cases of emergency such as natural disasters through the Federal Emergency Management

Agency. There are no federal government means-tested programs that specifically function in distributing clothing assistance. The allotment of clothing might serve as an employment support if work clothes are provided, or as a basic needs support if clothing is provided for those who cannot afford to buy clothes. More often, private and local agencies provide clothing assistance, typically in the form of work clothes. Organizations such as The Clothing Collaborative in Rhode Island, provide work appropriate clothes as well as interview skills to prepare low-income individuals for job opportunities (Dorcas Place Adult and Family Learning Center, 2004).

Probably because clothing assistance is provided on such a small scale and most often comes from private sources, there is virtually no discussion of clothing assistance in economic literature. Axelson *et al.* (2007) argues that clothing assistance for interviews should reduce the cost of working, thus functioning as a work incentive. These work incentives, however, are most likely statistically insignificant because the programs are so limited.

Similar to transportation assistance, there is no notable discussion of clothing assistance providing a work disincentive in economic literature. Like all work-support programs, however, clothing assistance can reduce the work incentives for individuals on the margin. Those earning marginally more than the cut off limit might reduce their earnings in order to qualify for assistance.

### **Multiple subsidy programs**

Most recipients of government subsidies in the U.S. (Keane and Moffitt 1998) and in this sample utilize more than one subsidy. Thus, the work incentives for

individual subsidies do not always accurately predict an individual's labor force participation because assistance programs usually interact with work incentives from other subsidies as well. Few authors have attempted to determine a relationship between combinations of subsidies and labor force participation. The interconnectedness is difficult to tease out. Many researchers, however, acknowledge the importance of this task. Axelson *et al.* (2007) explains that the purpose of using a comprehensive model of welfare participation is to:

“help identify which policy option(s) are more effective than others at reducing welfare dependency [and] because there are multiple ways in which welfare policies influence labor supply decisions, it is also possible that different policies have complimentary or possibly contradictory impacts on labour supply decisions” (p. 1023).

When households utilize multiple subsidy programs, the different types of work incentives can interact with each other, creating a combined additive or interactive effect on employment. Moffitt (2002) calculates the marginal tax rates (MTR) as the work incentives based. He explains:

“[MTRs] in the TANF program are now set by the states, and range from 0 to 100 percent.<sup>22</sup> SSI imposes a 50 percent rate, food stamps imposes a 30 percent MTR, and public housing and Section 8 programs typically impose double MTRs, one on income net of deductions and one on gross income, ranging from 10 to 30 percent. The Medicaid program is the most extreme

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<sup>22</sup> Moffitt also points out that “a zero percent MTR is possible only if the state imposes a maximum income level, which by itself imposes a cliff, or notch in the benefit schedule” (p. 6)

form of a cliff, or notch program, which is available in its entirety until eligibility is ended” (p. 5).

These MTRs vary somewhat based on certain deductions, eligibility limits, earnings levels, etc. When families combine multiple programs the MTR is even higher than indicated above (Keane and Moffitt 1998; Fischer 2000). However, although these combined tax rates are high, Keane and Moffitt (1998) find that small-to-moderate reductions in the tax rate do not have a large impact on labor force participation. They predict that labor is not impacted significantly by lowering the MTR because more people will utilize welfare programs. The impact, however, on an individual’s employment decision might still be impacted by a lower MTR.

Meyers *et al.* (2001) challenge the impact multiple MTRs have on labor force participation. They argue that different policies might offset each other’s benefits. For example, Huffman and Jenson (2005) describe the relationship between TANF, food stamps, and labor. They note that TANF increases the likelihood of receiving food stamps, and food stamps decrease the probability of working. Other research studies the overlap of TANF and housing assistance on employment. Ong and Blumenberg (1998) indicate that among welfare recipients in California, public housing does not provide a work disincentive. Blank and Riccio (2001) take these findings a step further and determine that welfare to work programs among recipients of both housing assistance and TANF are more effective than among non-recipients. Lee *et al.* (2005) indicate that receivers of both housing assistance and TANF are more likely to become self sufficient. Thus, the impact of mixing subsidy programs

and work is difficult to determine and results are highly dependent upon the variables and regression techniques researchers' use.

This thesis attempts to measure the impact multiple subsidies have on a woman's propensity to work, the hours she works, and her earnings by accounting for the impact of receiving individual subsidies as well as sets of subsidies. It analyzes the incentives involved in combinations of welfare programs that people utilize in order to understand how the welfare system impacts employment participation, hours worked, and earnings. Rather than focusing only on the impact of individual subsidy programs on labor force incentives or the impact of all components of the welfare system, this thesis analyzes the impact of the interactions of subsidy programs.

Following Blank and Riccio's (2001) model, it considers the interactions between subsidies to determine what the effectiveness of package for impacting labor market participation, hours worked, and earnings. Thus this thesis poses an innovative model with which to address the impact of receiving subsidy sets and challenges those studies that address welfare through a single-subsidy framework. Additionally, rather than addressing only the impact of labor force participation and hours worked, this thesis also studies programs' likelihood of moving recipients towards self sufficiency, as measured through earnings.

Figure 1 a:  
Basic Welfare Program

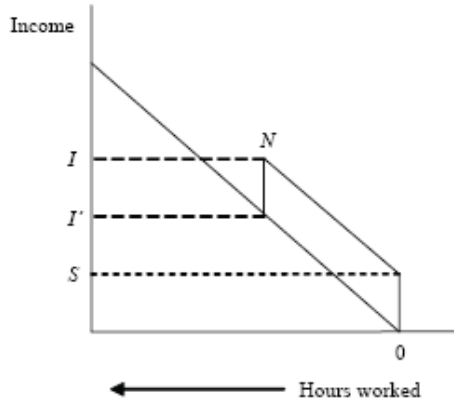
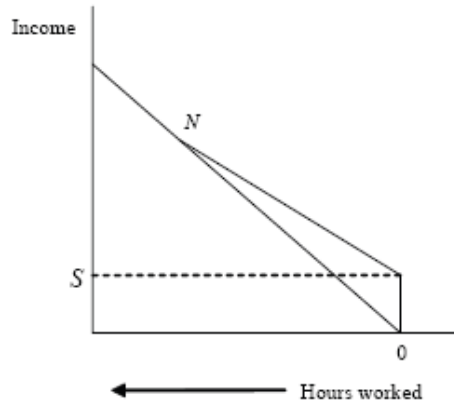


Figure 1 b:  
Gradual Welfare Program



Figure 1 c:  
Expanded Gradual Welfare Program



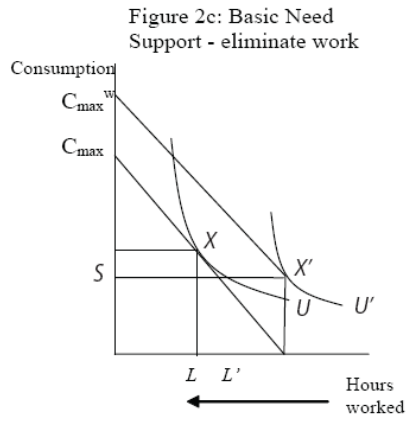
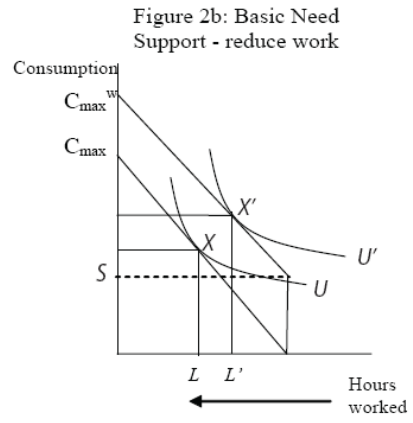
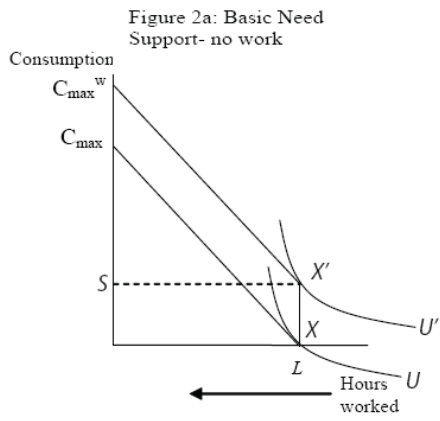


Figure 3a: Work Support-increase in work

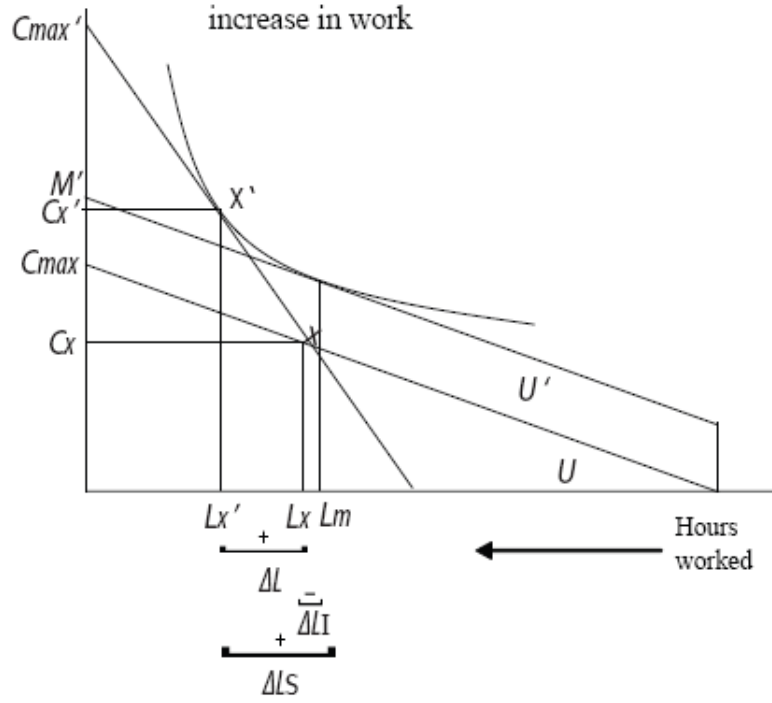
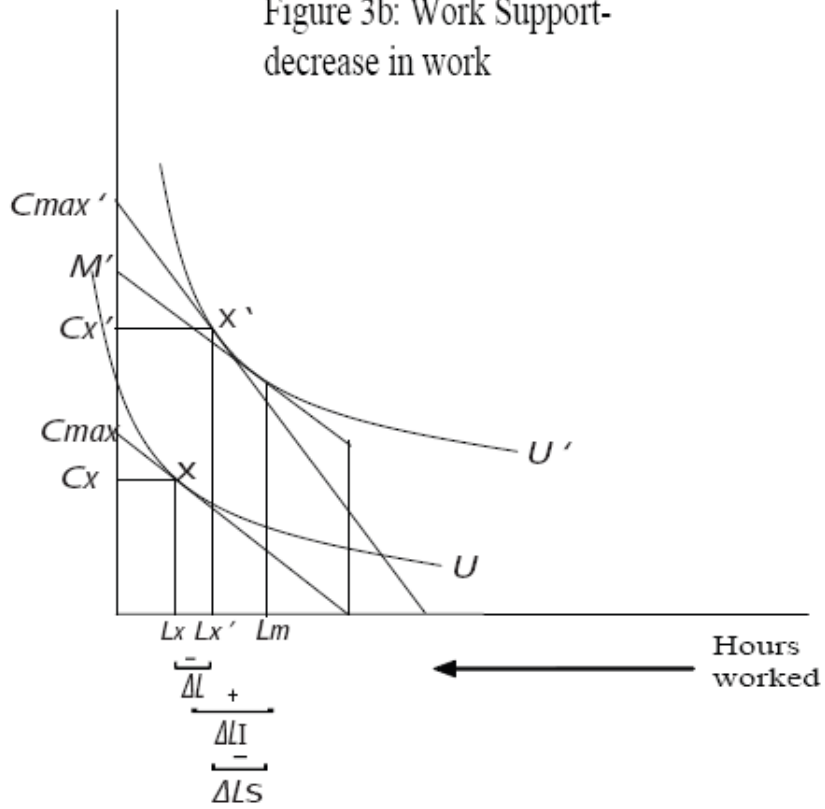


Figure 3b: Work Support-decrease in work





## Chapter 2: Description of Data

This study uses data from the Panel Study of Income Dynamics (PSID) from 1999 to 2005. The PSID is a longitudinal study of more than 7000 families that began in 1968. It draws from a representative sample of individuals living in the U.S. organized by family units. The PSID combines two samples, a nationally representative sample and a smaller sample of low-income families. Questions identify results for both the family unit and individuals within it. For the purpose of this study, only responses from working-age women in family units that experience low-incomes at some point between 1999 and 2005 are included. The PSID asks specific questions about utilization of many types of subsidies, which is vital to this study's analysis on different subsidy programs impacts on employment, hours worked, and earnings.

The sample for this project covers every other year from 1999 to 2005. Therefore, each woman is observed four times. I selected these years because the period after the 1996 welfare reform offers more variation of work incentives within programs and focuses on moving recipients towards self sufficiency. These years' interviews included a series of questions that provide welfare and work information (employment status, hours worked, and earnings) from the even years from 1998 to 2004 and about the participants' personal information from the odd years from 1999 to 2005.<sup>23</sup> I include multiple years for each person in the sample in order to deal with individual heterogeneity. I narrowed the dataset utilized in this thesis to include

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<sup>23</sup> I do not lag the welfare variables from the work information variables because each variable is provided only every other year for the even years. Among women who have been low-income, information about welfare participation from two years previous most likely has a very limited impact on one's employment status, hours worked, and earnings today.

women who are considered low-income at any point in the sampled years. Low-income is determined by family income being 150 percent of the poverty line or less. This is because families are not eligible for any of the subsidies discussed in this study if their income is more than 150 percent of the poverty line. LIHEAP has the highest eligibility income level at 150 percent of the poverty line. To understand the influence program participation has on labor market participation, the women in the sample must be of working age, between eighteen and 65 years old, throughout the entire sample.<sup>24</sup>

The sample includes 805 women. The women in this sample are not a nationally representative sample of low-income working age women because of the PSID structure. However, they provide useful variety to understand the impact that government subsidies' work incentives have on their labor market participation. Although one cannot draw inferences about low-income people based upon the results of this study, because the analysis is within a regression framework, I can address the impacts that government subsidies have on female employment.

The dependent variables in this study are employment status, hours worked, and earnings. I created the variable to measure employment based on hours worked in the previous year. If respondents reported working any hours in the previous year, I consider them as being employed. Seventy percent of the women report being employed in the pooled sample. Hours worked is a self reported variable of the hours a woman worked in the past year prior to the survey.<sup>25</sup> The average worker in the

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<sup>24</sup> I did not include anyone who died during the sample in the dataset.

<sup>25</sup> The PSID records the hours of the head of the household and the "wife" separately. I identify the hours a the woman works by including the head's hours if the woman is the head of the household and the "wife" hours if a man is the head of the household. "Wife" is in quotes because the PSID refers to

sample works a 32-hour work week fifty weeks a year. A woman's earnings is a measure of her labor force income, including wages, salaries, bonuses, overtime, tips, commissions, professional practice or trade sum of market gardening, and miscellaneous labor income. For the purpose of this study, earnings are expressed in real dollars with a base year of 2004, using the Consumer Price Index. On average women in the pooled sample earn \$11,000 per year.<sup>26</sup>

Certain characteristics regarding this sample population are included in order to account for other factors besides subsidies that might impact the dependent variables. When an individual lives with another person, whether legally married or cohabiting, this affects their propensity to work.<sup>27</sup> About 47 percent of the sample is either married or cohabiting with another individual.<sup>28</sup> Nearly sixteen percent of the people surveyed reported a different marital/cohabitation status over the surveyed years.<sup>29</sup> Cohabitation/marriage most likely decreases the hours worked and the likelihood that a woman works because then there are two possible earners in a household.

Education is a measure of the number of years each person has been formally educated. People in this sample average about eleven years of education. About thirty percent of the sample has spent at least a year in higher education. For each

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the primary earner as the head of the household. In a household with two adults, the adult who is not the head is considered a "wife."

<sup>26</sup> Two women earn more than \$100,000 during one year of the sample. They are included in this sample because their income was considered low-income in at least one year in the sample.

<sup>27</sup> I have grouped these together rather than including just legal marital status because more recipients responded to the question regarding cohabitation than legal marriage.

<sup>28</sup> Over half of the respondents did not answer this question in 2005. To account for this I use the 2003 data to indicate the marital status in 2005. If respondents did not report their marital/cohabitation status in years prior to 2005, I reclassified them as single.

<sup>29</sup> This number is most likely exaggerated because some respondents did not report their marital/cohabitation status every year.

year in the sample, the number of years of formal education among the sample increases because no additional women join the group, but some women get additional education. Each additional year of education most likely increases one's propensity to work, the hours they work, and their earnings because education provides knowledge and skills that increase productivity in paid labor.

Age is restricted to those between the ages of eighteen and sixty-five because women outside this age range face different work decision conditions. For example, women under 18 often face work restrictions and are in school, and women older than 65 are eligible for Social Security. The average age of women in this sample is 36 years, averaged over all the sample years. As expected, the age of the women in the sample increases over time. I include an age-squared variable because, as other studies suggest, age has a nonlinear relationship with productivity in paid work.<sup>30</sup>

About 75 percent of the women in the sample are people of color and/or Hispanic.<sup>31</sup> Although non-white women face different barriers to the labor market based on discrimination, they have a slightly higher employment rate than white women (U. S. Department of Labor 2003). It is common in economic labor literature to split the sample by race. Yet, this study pools the races. I ran a formal pooling test to determine if splitting the sample would provide more accurate information on the impact government subsidies have on female employment, hours worked, and

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<sup>30</sup> This study does not include a variable for experience because it is not directly asked of the respondents. Some research calculates experience by measuring the available amount of time in post-schooling workforce (age-education-5). This, according to Genser and Walls (1997), is standard in the female labor supply literature. But because work is less consistent among the lowest income households, this measure is most likely less accurate as a proxy for this group. Additionally, age and education are included in the regression and their effect is already controlled.

<sup>31</sup> The interviewer asked respondents up to four times about their race if the response was unclear. The variable used in this study for race is the last response someone gave to the interviewer. The responses in 2005 were incomplete so I used the 2003 data to make the answers consistent across the years.

earnings. To do this I ran a regression including all the variables in addition to all the variables interacted with a race dummy and tested for the joint significance of the interacted variables using an F-test. The results of the F-tests did not reject pooling for the employment and earnings regressions. Therefore, I pool the sample across races even (for simplicity and presentation) for the hours equation.

Every woman included in the sample has at least one child under eighteen at some point in the panel.<sup>32</sup> 474 children were born during the sample period. The greater the number of children in a household the less likely a woman is to work, because she most likely has more household responsibilities.

The women's youngest children from the pooled-years sample average about 6.5 years old. The older a child is, the more likely it is that a woman will probably work and have higher earnings, because when children are in school a woman's child care responsibilities are reduced. Additionally, older children are more self sufficient and can participate in household responsibilities, freeing a woman's time to participate in the labor market.

Variables that indicate location also impact labor force participation because they indicate the ease of job accessibility. The urban variable indicates if a woman lives in an "urban" or "rural" location. I code urban as any county in a metropolitan area or that has a population with more than 20,000 people adjacent to a metropolitan area. Conversely, "rural" is considered any county that is not adjacent to a metropolitan area, or has a population of less than 20,000 people that is adjacent to a metropolitan area. Typically, the cost of living is lower in "rural" areas than in

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<sup>32</sup> The PSID asks respondents how many children they currently have under the age of eighteen, and the data are provided for the odd years.

“urban” areas. Almost one quarter of the women in the sample live in areas that are coded as rural. This is about the same proportion of people living in rural areas in the U.S (U.S. Census Bureau 1990).

This study focuses on women’s responses to welfare programs. I include individual subsidies, interacted subsidy sets (receipt of two subsidies), personal characteristics, holistic welfare categories based on states, and dummy variables for the years. The PSID provides data on the following government in-kind and cash subsidies: food assistance, housing assistance, heating assistance, TANF, SSI, Medicaid, child care assistance, clothing assistance, job assistance, and transportation assistance that were discussed in Chapter One. Almost fifty percent of the pooled sample reported receiving one or more of these government subsidies at some point during the surveyed years. In this sample, most of the women are not constantly receiving assistance, but rather cycle in and out of different types of government assistance. As described in Chapter One, the largest percentage of households that participate in welfare programs in the sample receive food assistance at 34 percent, followed by housing assistance (19.45 percent), heating assistance (12 percent) and TANF (10 percent). A smaller portion of women in this sample live in households that report receipt of SSI (6.9 percent), Medicaid (5.3 percent), child care assistance (5.3 percent), and job assistance (3.4 percent) subsidies. Transportation assistance (2.3 percent) and clothing assistance (0.6 percent) are provided to the least amount of households in this sample.

The variables that indicate receipt of different welfare programs are all included as dummy variables. Any welfare-related question that the surveyed

individuals did not answer was reclassified with a zero value. For example, if the respondent does not answer if they receive housing assistance, their result is changed to indicate that they did not receive housing assistance.<sup>33</sup> Although the amount of subsidy recipients receive might provide more information regarding their response to the program, I use dummy variables to indicate if a person is a recipient in order to create symmetry between the variables. Very few subsidies include the dollar amounts. Additionally, certain variables cannot be monetized (such as job assistance).

The PSID records the monthly amount of food assistance from 1998 to 2004. If women received food assistance at all between 1998 and 2004, they averaged about ten months of receipt per year. Any woman in a household that received food stamps at all in a given year is considered to be a food assistance recipient in that year.<sup>34</sup>

Housing assistance is tracked less precisely. Recipients are asked several questions about the types of housing assistance they receive, many of which overlap. Women in this sample were asked, every other year, if they received housing assistance if they lived in a public housing project, or if the government paid all or part of their rent. Ong (1998) warns of the danger in measuring types of housing assistance from self-reported data, explaining that recipients are likely to confuse the types of housing assistance they received. Rather than attempting to measure the impact of different types of housing assistance, I combine these measures to indicate the receipt of any sort of government housing assistance.

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<sup>33</sup> If I did not reclassify the responses those who failed to answer any one question would be left out of the regression, causing my sample size to be too small.

<sup>34</sup> Although the PSID collects data on food assistance for every year of the sample, in order to be symmetrical with the treatment of the other assistance programs, I only include data from the even years.

Recipients of heating assistance indicate that the government provided a subsidy to help pay for heating spanning over the winter months of two different years. Although this study includes heating assistance as a dummy variable, the PSID records the amount of heating assistance households receive during the winter. Of the twelve percent who received heating subsidies, on average, they received \$350 throughout the winter. I include heating assistance as a dummy variable, so if a woman reports receiving any money for heating assistance she is considered a recipient of heating assistance.

The PSID has a broader definition of TANF, most likely to account for local variations in programs. The TANF dummy variable reflects if the household receives TANF (or other aid from state programs for children) from the year prior to the survey.

Respondents were also asked if the head or “wife” received SSI. If the woman reported receipt of any SSI in a given year, they were included as a recipient of SSI in that year.

The PSID also asks women if they received any health assistance, child care assistance, job assistance, transportation assistance, or clothing assistance from the government in the year prior as a result of having a low-income. Each of these subsidies is a variation of the same question.

There is a significant amount of variation among the women in program participation and from year to year for a given woman. Table 2.1 indicates the correlation between the programs. No programs are highly correlated. Such low



correlation provides important variation in the sample and indicates low multicollinearity.

	Food	Housing	Heat	TANF	SSI	Transportation	Child Care	Medicaid	Job
Food									
Housing	0.28								
Heat	0.24	0.12							
TANF	0.37	0.17	0.09						
SSI	0.15	0.11	0.08	0.12					
Transportation	0.12	0.08	0.07	0.14	0.01				
Child Care	0.15	0.09	0.08	0.12	0.01	0.19			
Medicaid	0.12	0.08	0.08	0.08	-0.02	0.09	0.14		
Job	0.14	0.14	0.10	0.23	0.02	0.23	0.20	0.28	
Clothing	0.04	0.04	0.06	0.07	0.03	0.12	0.07	0.10	0.20

Table 2.2 indicates the correlation of receipt of a program from year to year and from beginning to end of the sample period. While recipients of the programs that have the highest utilization have the higher correlations from year to year, most programs are not correlated. Most work support subsidies seem to be less correlated between years than basic needs subsidies. Perhaps this is due to the success of work support in leading to self sufficiency. Or, perhaps it is indicative of those who fail to gain successful employment with these supports being discouraged from employment.

	1998-2000	2000-2002	2002-2004	1998-2004
Food	0.46	0.58	0.48	0.28
Housing	0.63	0.60	0.60	0.49
Heat	0.45	0.39	0.39	0.25
TANF	0.45	0.43	0.32	0.26
SSI	0.62	0.61	0.57	0.38
Transportation	0.03	0.20	0.16	0.06
Child Care	0.28	0.35	0.26	0.07
Medicaid	0.19	0.11	0.11	0.01
Job	0.07	0.11	0.08	0.06
Clothing	-0.01	-0.00	-0.00	-0.01

I also include subsidy sets as dummy variables indicating if individuals receive two subsidies. The most-used subsidy groupings are housing/food stamps, housing/SSI, and SSI/food stamps. There are 45 different combinations of subsidy groupings. Those that have interesting and statistically significant results are discussed in Chapter Four.

Finally, welfare program participation might have different impacts on women's employment rates, hours worked, and earnings, depending on the laws of a particular state in addition to the regulations of the federal government. States typically form welfare policies around different ideologies. Meyers *et al.* (2000) serves as a useful model to group policy types based on state regulations. They separate states into five clusters: minimal, limited, conservative, generous, and integrated, basing their clustering of the state's income support, in-kind benefits, employment supportive in-kind benefits, tax policies, and enforcement of private responsibility.<sup>35</sup> "Minimal" states (Alabama, Arkansas, Kentucky, Louisiana, Mississippi, South Carolina, Tennessee, Texas and West Virginia) provide the lowest AFDC and child care benefits, and have the lowest inclusion rates in their programs, as well as the highest tax burden on poor families. States that provide "limited" support (Arizona, Delaware, Florida, Georgia, Missouri, North Carolina, New Mexico, Nevada, Oklahoma, and Virginia) provide slightly higher amounts of income support, child care assistance, and tax relief. They are notably low, however, in

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<sup>35</sup> Meyers *et al.* (2001) does not categorize the District of Columbia, Alaska, and Hawaii because of missing values and extreme values (p. 465). In order to include those individuals in this thesis, I categorize Alaska and the District of Columbia based on similar criteria. No one in this study lives in Hawaii. Three respondents reported living outside of the fifty states in 1999. Rather than dropping these individuals out of the sample, I categorized them in the place they reported living in the following year.

enforcing private responsibility. “Conservative” states (Idaho, Indiana, Kansas, Montana, North Dakota, Nebraska, South Dakota, Utah, and Wyoming) provide limited employment supportive in-kind benefits, average tax policies benefiting the working poor, and high levels of enforcement of private responsibility. The states that are grouped as providing a “generous” package (California, Colorado, Connecticut, Iowa, Illinois, Massachusetts, Maine, Michigan, New York, Oregon, Pennsylvania, Rhode Island, Washington, and Alaska<sup>36</sup>) offer cash assistance, child care assistance, tax incentives, and job assistance higher than the national average. Lastly, states with “integrated” policies (Maryland, Minnesota, New Hampshire, New Jersey, Ohio, Vermont, Wisconsin, and the District of Columbia<sup>37</sup>) combine generous and inclusive benefits with progressive taxes in their assistance programs, as well as generous employment supportive in-kind subsidies and a strong emphasis on private responsibility. The group of “holistic” variables provides an indicator as to the type of welfare laws a woman faces. They are included as a group of dummy variables. These variables might capture factors beyond the receipt of subsidies about how the welfare system runs in specific locations.

Lastly, dummy variables for three of the four years sampled—2001, 2003, and 2005—are included. This will account for time related exogenous factors common to the sample that are related to individuals’ decisions to work.<sup>38</sup>

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<sup>36</sup> I categorize Alaska based on De Jong *et al.* (2006) study. They categorize states by their stringency in “rules regarding eligibility requirement for groups,” “rules regarding behavioral eligibility requirements,” and “rules regarding eligibility limits and exemptions” (p.770-772).

<sup>37</sup> I categorized the District of Columbia using De Jong *et al.* (2006) as well.

<sup>38</sup> Because there is a five year lifetime limit on receiving TANF, those who have continuously received TANF since its founding in 1996 are no longer eligible in 2001. However, because states adopted TANF at varying points between 1996 and 1998, this lifetime limit is not seen across the board (U.S. Congress 1996).

Table 2.3 provides a summary of each of the variables described above including showing the unit, range, mean, and standard deviation.

Table 2.3: Variables summary		
Variable	Unit (range)	Mean (standard deviation)
Employment Indicates if employed in previous year	Dummy (1=employed)	0.689 (0.463)
Hours Indicates amount of hours worked in previous year	Hours/year (0-5200)	1096.074 (972.652)
Earnings Indicates labor earnings from previous year	\$/year (0-155625)	10961.55 (12718.51)
Food Indicates if received food assistance in previous year	Dummy (1=receipt of food assistance)	0.331 (0.471)
Housing Indicates if received housing assistance in previous year	Dummy (1=receipt of housing assistance)	0.195 (0.396)
Heating Indicates if received heating assistance in previous year	Dummy (1=receipt of heating assistance)	0.112 (0.315)
TANF Indicates if received TANF in previous year	Dummy (1=receipt of TANF)	0.089 (0.284)
SSI Indicates if received SSI in previous year	Dummy (1= receipt of SSI)	0.069 (0.253)
Medicaid Indicates if received Medicaid in previous year	Dummy (1= receipt of Medicaid)	0.053 (0.224)
Child care Indicates if received child care assistance	Dummy (1=receipt of Child care)	0.053 (.225)
Job Indicates if received any job assistance	Dummy (1=receipt of job assistance)	0.034 (0.182)
Transportation Indicates if a received transportation assistance ( <i>trans</i> )	Dummy (1=receipt of transportation assistance)	0.023 (0.151)
Clothing Indicates if received clothing assistance	Dummy (1=receipt of clothing assistance)	0.006 (0.078)
Age Indicates the age of a person	Years (18-65)	35.997 (8.81)
Age Squared Indicates the age of a person squared	Years squared (324-4225)	1373.411 (659.741)
Child age Indicates the age of the youngest child in a household	Years (0-17)	6.505 (4.729)
Cohabit Indicates if a person is married/permanently cohabitating	Dummy (1=cohabiting)	0.469 (0.499)
Education Indicates the number of years a person is formally educated	Years (0-17)	11.133 (3.570)
Number of Children Indicates the number of children in a	Number of children (0-9)	2.232 (1.260)

household under the age of 18				
Race Indicates if a person is white		Dummy (1=white)		0.242 (0.429)
Urban Indicates if a household is located in an “urban” area		Dummy (1=urban)		0.681 (0.466)
Holistic Variables				
Minimal Indicates if household is located in states with minimal welfare policies: AL, AR, KY, LA, MS, SC, TN, TX, WV Dummy (1=minimal)	Limited Indicates if a household is located in states with minimal welfare policies: AZ, DE, FL, GA, MO, NC, NM, NV, OK, VA Dummy (1=limited)	Conservative Indicates if a household is located in states with minimal welfare policies: ID, IN, KS, MO, ND, NE, SD, UT, WY Dummy (1=conservative)	Generous Indicates if a household is located in states with minimal welfare policies: CA, CO, CT, IA, IL, MA, ME, MI, NY, OR, PA, RI, WA Dummy (1=generous)	Integrated Indicates if a household is located in states with minimal welfare policies: (MD, MN, NH, NJ, OH, VT, WI Baseline group
0.311 (0.463)	0.197 (0.398)	0.042 (0.200)	0.250 (0.433)	0.166 (0.372)

## Chapter 3: Methods

This chapter discusses the methods used in this study to analyze the data from the PSID. First I explain why I use panel data. Then I review the probit and Tobit models used for the different dependent variables. Following, I discuss why I use random effects instead of fixed effects as well as the five specifications involved with each model. I conclude by discussing the Wald test used for testing joint significance.

### Panel data

Panel data is used to help facilitate the observation of causal relationships where they might otherwise be difficult to confirm by capturing unobserved characteristics of the women's behavior over time. Additionally, panel data helps capture the impact of time varying effects. In contrast to a pooled dataset, which combines separate cross sectional units in different time periods, panel data follows the same individuals for a certain length of time.

Ordinary Least Squared (OLS) regressions using panel data take the form:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \dots + \beta_k X_{kit} + v_{it} \quad (1.1)$$

$$v_{it} = a_i + u_{it} + e_t \quad (1.2)$$

In equation 1.1,  $Y_{it}$  represents a dependent variable for individual  $i$  in time period  $t$  with  $k$  regressors.  $\beta_0$  is an intercept.  $x_{1it}$  through  $x_{kit}$  represent independent variables that affect the outcome  $Y_{it}$ .  $\beta_1$  through  $\beta_k$  represent the coefficients.  $v_{it}$  is an error encompassing three types of error as expressed in equation 1.2—individual-specific error that does not vary over time ( $a_i$ ), time-specific error that does not vary

between individuals ( $e_t$ ), and idiosyncratic error that varies by individual and time ( $u_{it}$ ).  $e_t$  accounts for macro changes over time and it is unlikely that this is large over seven years, especially because inflation is accounted for and year dummy variables are included in the regression.

### **Probit model**

Alternative models to OLS can be used for panel data to better fit the distribution of the data. In this sample, the dependent variable for work participation is a dummy variable. It indicates if someone was employed (=1) at all in the previous year or not working (=0). An OLS regression does not fit consistent estimators to the data because the dependent variable is restricted between 0 and 1. It is also possible in OLS that the independent variables will calculate values outside of this 0 to 1 range for the dependent variable.

The probit model was developed by Chester Ittner Bliss as a binary response model used to analyze data “where the response probability is the standard normal cumulative distribution function evaluated in a linear function of the explanatory value” (Wooldridge 2006, p. 868). In other words, a probit model calculates the probability that the dependent variable equals one. Probit models estimate the probability  $Y_{it}$  as displayed in equation (2.1):

$$Y^* = \beta_0 + \beta_1 X_{1it} + \dots + \beta_k X_{kit} + v_{it} \quad (2.1)$$

They use the cumulative standard normal distribution to scale the results where  $v_{it}$  are assumed normally distributed in equation (2.1) as shown in equation (2.2) and (2.3).

$$Y_{it} = 1 \text{ if } Y_{it}^* > 0 \quad (2.2)$$

and

$$Y_{it}=0 \text{ otherwise} \quad (2.3)$$

The marginal effects of the variables are found using equation (2.4):

$$\text{Prob} (Y_{it}=1) = 1- F (-\beta x_{it}) \quad (2.4)$$

where  $F$  is the standard normal cumulative distribution function. Scaling the equation by the standard normal cumulative ensures that the  $Y$  will lie between 0 and 1. The  $\beta x$  can be calculated using the means of each variable.  $\beta x$  can also be calculated to run simulations where the impact of one independent variable can be determined if the other independent variables had specific values.

A probit model using panel data has a comparable measure to an OLS R-squared, *rho* ( $\rho$ ), measuring the standard deviation as represented in equation (2.5)

$$\rho = (\sigma^2_v / (\sigma^2_v + 1)) \quad (2.5)$$

$\rho$  measures the proportion of the overall variance ( $\sigma^2_v + 1$ ) for the panel-level variance, where  $\sigma^2_v$  is the standard deviation. The standard deviation is obtained from the error term,  $v_{it}$ .

### **Tobit model**

Just as the probit model is used to compensate for the distribution of a binary dependent variable, another model is needed to account for truncated dependent variables such as hours worked and earnings. I use a Tobit model to account for the dependent variables of hours worked and earnings which have a minimum value clustered at zero. If there is clustering at one end, as with these dependent variables, the function will be weighted on the left side, and an OLS regression will not fit consistent estimators to the data. It is also possible that the independent variables will



calculate negative values for the dependent variable, even though the definition of hours worked and earnings does not allow for values below zero. Tobit models account for these issues.

The Tobit model was developed by James Tobin as a method for analyzing data with a truncated range for the dependent variable. In this sample, the number of hours worked ranges from 0 to 5200 hours per year. Many individuals report no time spent in the labor market. Earnings range from \$0-\$155,625 per year.<sup>39</sup> Because many individuals do not work, the earnings distribution has a clustering on zero.<sup>40</sup> An OLS model attempts to linearize data, while the true relationship between the dependent and independent variables does not resemble an upward sloping line. The left-censored Tobit model utilizes maximum likelihood estimation to calculate the probability of obtaining each observation of the dependent variable, translating all values below zero. The Tobit model is shown in equation (3.1) through (3.3):

$$Y^* = \beta_0 + \beta_1 X_{1it} + \dots + \beta_k X_{kit} + v_{it} \quad (3.1)$$

$$Y_{it} = Y_{it}^* \text{ if } Y_{it}^* > 0 \quad (3.2)$$

and

$$Y_{it} = 0 \text{ if } Y_{it}^* \leq 0 \quad (3.3)$$

$v_{it}$  is assumed normally distributed.

The variance for a panel Tobit model involves both the overall variance (random unobserved error or standard deviation,  $\sigma^2_v$ ) and panel-level variance (time invariant error,  $\sigma^2_e$ ). The standard deviation is obtained from the error term,  $v_{it}$ . *Rho*,

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<sup>39</sup> Although earnings are typically included in regressions as logged variables, this is done normally to scale down large earnings. Because this sample is restricted to women who are low-income for at least one year in the sample, I include earnings as a level. The earnings variable has a large range because of an outlier whose earnings were substantially higher in one year of the sample, while she still qualified as low-income in another year.

<sup>40</sup> Although individuals who are self-employed would be able to have negative earnings due to business losses, the PSID truncates earnings at zero dollars.

the Tobit model's equivalent R-squared, is a measure of the percent the random unobserved variance occurs out of the total variance as represented in equation (3.4)

$$\rho = (\sigma_v^2 / (\sigma_\epsilon^2 + \sigma_v^2)) \quad (3.4)$$

As in OLS, the coefficients in a Tobit model indicate the marginal effect the independent variable has on the unit of the dependent variable.

### **Random effects**

The models in these regressions use random effects. Random effects models, unlike fixed effects models, can include factors that do not vary over time. Random effects assume the independent variables are uncorrelated with the error term (i.e., that all independent variables are exogenous). The estimators for values of the independent variable are only consistent if this assumption holds true. Assuming that independent variables are uncorrelated with the error term is problematic without formally testing this assumption. However, the panel Tobit and probit estimates requires this random effects assumption to be true. In using panel Tobit and probit models the researcher must forgo the opportunity to test this assumption.

A fixed effects model would account for endogeneity because it does not make assumptions about the correlation between the independent variables and the time-specific portion of the error terms,  $a_i$  from equation (1.2). It also eliminates any time-invariant variables. The fixed effects model eliminates the individual-specific error term by de-meaning the independent variables. In other words, a fixed effect model analyzes the changes in independent variables over time by taking the difference between  $Y_{it}$  and the mean of  $Y_{it}$ , yielding  $\Delta Y_i$ . Since the individual-specific

error components do not vary over time, the  $\alpha_i$  portion of  $v_{it}$  drops away, leaving only time-specific and idiosyncratic error components, which are assumed not to be correlated with the independent variables. While this model is beneficial in accounting for endogenous variables, it also requires that independent variables vary significantly over time in order to calculate consistent estimators. With little variation in the independent variables, a fixed effects model may calculate coefficients with large standard errors and low  $t$ -statistics because there is not sufficient information to make more precise estimates. In this sample, several variables such as race do not change. Therefore they would not be included in the regression. Additionally, age, because it changes consistently through time, would not provide meaningful results. Most important, however, is that someone who receives welfare consistently would not be included as impacting the coefficients on those variables. Because this thesis addresses the impact government subsidies have on employment, hours worked, and earnings, it is vital to include all information regarding welfare receipt. For these reasons I use random effects models.

### **Specifications**

For each dependent variable, I have run five different regressions. The first includes only independent variables that address personal characteristics: age, age squared, cohabitation, years of formal education, number of children, race, and urban/rural location. I also include dummy variables for the different years in the sample. This model is included as a baseline case.

Then I build a model including individual welfare subsidies, in addition to personal characteristics. In this second specification I add individual subsidy categories: food assistance, housing assistance, heating assistance, TANF, SSI, Medicaid, child care assistance, job assistance, transportation assistance, and clothing assistance. In the third specification I add the dummies indicating receipt of interacted subsidy sets to the previous model.<sup>41</sup>

The last two specifications include holistic state variables. These variables—minimal, limited, conservative, generous, and integrated—account for the holistic ideologies of welfare laws which vary by state. The holistic variables, as discussed in Chapter Two, are adopted from Meyers *et al.* (2001). Because this is a national sample and states have autonomy over most welfare laws, these variables should account for the types of laws that govern recipients and indicate certain restrictions and/or generosity beyond the federal level that might impact women’s employment rate, hours worked, and earnings in particular ways. I add the holistic variables to both the individual subsidy specification (specification 4) and the interacted subsidy set specification (specification 5).

### **Wald test**

Wald tests are used to determine the joint significance of groups of independent variables. In this analysis I calculate Wald tests to see if there is joint significance for the group of individual welfare program variables, for the group of

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<sup>41</sup> I attempted to model more comprehensive packages of recipients combining three and four subsidies. Because of the large number of variables with very small variations very few of these interaction variables were significant but as a group they were not jointly significant.

interacted subsidy set variables, for the group of personal characteristics variables, and for the group of holistic state variables.

The Wald test can be calculated using the unrestricted model. The null hypothesis that each group of variables is equal to zero is tested by calculating

$$W = (RB-r)'(RVR')^{-1}(RB-r) \quad (4)$$

where  $B$  is the coefficient vector,  $V$  is the estimated variance-covariance matrix, and  $RB=r$  as a set of  $q$  linear hypotheses to be jointly tested.  $W$  can be compared to the chi-squared distribution to test for the joint significance because the distribution of the Wald test has an asymptotic chi-squared distribution (STATA 2007; Harvey 1990 pp. 166-168).

## **Chapter 4: Results and Discussion**

This chapter reviews the results of the employment, hours, and earnings regressions and discusses their implications. I highlight the subsidy interactions that have statistically significant impacts.

### **Employment results**

Table 4.1 contains the results of the five specifications for the employment rate. The results of the specifications, including interacted welfare variables measuring employment, have a better fit than the specification with only non-interacted welfare variables. The sets of personal variables and non-interacted welfare variables are significant, while the interacted sets of subsidy variables and the holistic variables are not significant. However, certain interacted subsidy variables are individually significant. I therefore focus my discussion of the results for employment status on specification two that includes only non-interacted welfare subsidies and personal characteristics, except when I discuss the impact of receiving statistically significant sets of subsidies in specification three.

Most of the variables for personal characteristics are consistent with previous research. Women are most likely to work when they are middle-aged. The older the age of the youngest child, the greater an individual's propensity to work, while the more children a woman has, the less likely she is to work. Those women who cohabit are less likely to work. Years of education, however, do not have a statistically significant impact on employment. The formal education a woman has received does not impact her propensity to work, although it probably does impact the type of work

in which she engages. Also, race plays a statistically insignificant role in the probability of working when only personal variables are considered. When welfare is added to the base line specification, being non-white reduces one's probability of working. Living in an urban area has a statistically insignificant impact on employment in the welfare specifications. The dummy variables for each year are statistically significant and positive. Individuals in the sample are most likely to work in 2000, closely followed by 1998, and less in 2002, but all higher than in 2004. This reflects the employment rates which peaked in 2000 (U.S. Department of Labor, 2006).

I run simulations of the effects subsidies have on women with the personal characteristics of an average woman in the sample.<sup>42</sup> The marginal effects of changing variables are calculated from the coefficients and the mean values of each variable to calculate  $\beta x$  from equation (2.4) in Chapter Three. According to these calculations, while about seventy percent of the women in this sample actually work, 85 percent of them would work if they received no subsidies at all.

As expected, basic needs supports reduce the likelihood that recipients are employed. Employment supports typically increase the likelihood of employment. Food assistance, housing assistance, TANF, and SSI consistently statistically significantly decrease a recipient's propensity to work in each specification. Those who receive food assistance in this sample are about eighteen percentage points less likely to work than those who do not receive food assistance. The marginal effect of receiving housing assistance is a six percentage point decrease in the employment

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<sup>42</sup> The results from the simulations and the marginal effects are calculated from the data displayed in Table 4.1 and discussed in this section.

propensity. TANF has a negative marginal effect on work of over 25 percent.

Recipients of SSI work twenty percentage points less than non-recipients in this sample.

When recipients combine TANF and SSI—two forms of cash assistance—the negative impact on employment increases. In addition to the impact on employment from receiving TANF and SSI, recipients of this subsidy set work 23 percentage points less than those who do not combine these programs. So, if a woman with the average personal characteristics of someone in this sample combined TANF and SSI and received no other subsidies, their probability of working is only eighteen percent. These results must be interpreted with caution because the causality is unclear. There might be an external time varying factor that causes a woman to receive both SSI and TANF and to simultaneously reduce her employment. However, when SSI is combined with housing assistance, the negative marginal effects of both are offset by ten percent. Perhaps housing assistance provides enough stability for those who qualify for SSI, enabling them to maintain employment at a slightly higher level.

Heating assistance and Medicaid are less consistently statistically significant than the other basic needs supports. They are only statistically significant in the specifications that include interacted subsidy sets in which heating assistance reduces recipients' propensities to work by ten percentage points, and Medicaid reduces recipients' propensities to work by fifteen percentage points.

The only employment support subsidies that are statistically significant are child care assistance and job assistance in the non-interacted subsidy specifications. As expected, both subsidies increase a recipient's propensity to work. The marginal



effect of child care assistance increases one's propensity to work by almost thirteen percent. Similarly, job assistance has a positive marginal effect of almost ten percent on a woman's employment rate. Transportation assistance and clothing assistance have a statistically insignificant impact on employment participation.

When recipients combine job assistance and transportation assistance, the positive impact of job assistance on employment increases by thirteen percentage points. Most women in this sample would work if they received both job assistance and transportation assistance. For example: a 36 year old cohabiting woman of color, with two children, without a high school degree, living in an urban area receiving both job assistance and transportation assistance, her propensity to work is 99 percent. A single woman with these same characteristics has a 99.9 percent probability of working. If a woman receives assistance in obtaining a job and a means of getting to that job, she is more likely to work than if she only receives job assistance or transportation assistance.

Conversely, recipients who combine child care assistance with heating assistance offset the positive impact of child care assistance and increase the negative impact of heating assistance, thereby decreasing a recipient's likelihood of working by almost 25 percentage points. For women with the average personal characteristics of those in this sample, only sixty percent would work if they were receiving only child care assistance and heating assistance. This finding should be further tested and explored because the reasons for the effects of this combination are not apparent.

Although transportation assistance has a statistically insignificant impact on employment, when combined with housing assistance it offsets the negative impact

enough to increase a dual recipient's probability of working by one percentage point. Perhaps one's propensity to work increases because combining the subsidies provides recipients with additional stability. About 96 percent of the women with the personal characteristics of the average women in this sample would work if they were only combining transportation assistance and housing assistance.

Clothing assistance is never statistically significant. Because clothing assistance is not defined by the PSID, it is unclear whether clothing assistance functions as employment support or basic needs support. The causal effects of clothing assistance are particularly unclear because the government distributes clothing assistance to households that face crises such as natural disasters that are not accounted for in the model. More careful tracking of clothing assistance might provide some clarity on its impact.

Holistic state variables are both independently and jointly statistically insignificant. As based on the Meyers *et al.* (2001) divisions, a state's strictness or generosity has no statistically significant impact on the employment rate of welfare recipients in this sample.

	Personal Coefficients	Personal and Welfare	Personal, welfare, and interactions	Personal, welfare, and holistic	Personal, welfare, interactions, and holistic
Age	0.08** (0.04)	0.08 ** (0.04)	0.07* (0.04)	0.08** (0.04)	0.07* (0.04)
Age squared	-0.00 *** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)
Child age	0.03 *** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)
Cohabit	-0.89 *** (0.10)	-1.28*** (0.11)	-1.23*** (0.12)	-1.28*** (0.11)	-1.23*** (0.12)
Education	-0.01 (0.01)	-0.02 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Number of Children	-0.11*** (0.04)	-0.06* (0.04)	-0.06 (0.04)	-0.06* (0.04)	-0.06* (0.04)
Race	-0.20 (0.13)	-0.25** (0.12)	-0.26** (0.13)	-0.26* (0.12)	-0.27** (0.13)
Urban	0.18 ** (0.09)	0.13 (0.09)	0.14 (0.10)	0.12 (0.09)	0.13 (0.10)
D1998	0.48 *** (0.10)	0.47*** (0.10)	0.49*** (0.10)	0.47*** (0.10)	0.49*** (0.10)
D2000	0.52 *** (0.09)	0.50 *** (0.09)	0.50*** (0.09)	0.50*** (0.09)	0.50*** (0.09)
D2002	0.23 *** (0.08)	0.23*** (0.09)	0.22*** (0.09)	0.23*** (0.09)	0.22*** (0.09)
Food		-0.60*** (0.09)	-0.44*** (0.14)	-0.60*** (0.09)	-0.45*** (0.14)
Housing		-0.21* (0.11)	-0.51 ** (0.23)	-0.21* (0.11)	-0.53** (0.23)
Heating		-0.12 (0.12)	-0.42 * (0.23)	-0.12 (0.12)	-0.43* (0.23)
TANF		-0.80*** (0.14)	-0.88 ** (0.41)	-0.81*** (0.14)	-0.88** (0.41)
SSI		-0.61*** (0.15)	-0.61*** (0.16)	-0.62*** (0.15)	-0.59*** (0.16)
Medicaid		-0.23 (0.16)	-0.54** (0.28)	-0.24 (0.16)	-0.57** (0.28)
Child care		0.64*** (0.18)	0.35 (0.39)	0.64*** (0.18)	0.34 (0.39)
Job		0.39* (0.21)	0.19 (0.54)	0.39* (0.21)	0.43 (0.52)
Transportation		-0.01 (0.24)	-0.81 (0.52)	-0.01 (0.24)	-0.82 (0.52)
Clothing		-0.10 (0.43)	64.97 (251347.4)	-0.09 (0.43)	63.63 (592438.40)
Food/Housing			-0.417* (0.23)		-0.41 (0.23)
Food/Heating			0.18 (0.26)		0.17 (0.26)
Food/TANF			0.18 (0.41)		0.17 (0.41)
Food/SSI			-0.16		-0.15

			(0.17)		(0.17)
Food/Medicaid			-0.13 (0.39)		-0.15 (0.39)
Food/Child care			-0.01 (0.42)		-0.02 (0.42)
Food/job			-0.27 (0.63)		0.56 (0.66)
Food/transportation			-0.59 (0.87)		-0.59 (0.87)
Food/clothing			-86.59 (257763.3)		-84.46 (594930.90)
Housing/heating			0.07 (0.28)		0.06 (0.28)
Housing/TANF			0.30 (0.31)		0.29 (0.31)
Housing/SSI			0.66*** (0.25)		0.68 (0.25)
Housing/Medicaid			0.62 (0.45)		0.59 (0.44)
Housing/child care			-0.08 (0.42)		-0.09 (0.42)
Housing/job			-0.38 (0.59)		-0.37 (0.59)
Housing/transportation			2.13** (0.95)		2.12** (0.96)
Housing/clothing			14.42 (25553.89)		13.65 (24322.38)
Heating/TANF			-0.27 (0.35)		-0.26 (0.35)
Heating/SSI			0.28 (0.27)		0.29 (0.26)
Heating/Medicaid			0.40 (0.45)		0.44 (0.45)
Heating/child care			-0.79 * (0.49)		-0.80* (0.49)
Heating/job			0.28 (0.59)		0.17 (0.60)
Heating/transportation			1.37 (1.04)		1.45 (1.05)
Heating/clothing			0.23 (45605.26)		0.44 (29552.41)
TANF/SSI			-0.79 ** (0.38)		-0.81** (0.38)
TANF/Medicaid			-0.61 (0.55)		-0.60 (0.56)
TANF/child care			0.73 (0.51)		0.70 (0.51)
TANF/job			-0.27 (0.63)		-0.30 (0.64)
TANF/transportation			-1.77 (1.23)		-1.80 (1.24)
TANF/clothing			43.40 (251008.8)		43.16 (592286.50)
SSI/Medicaid			0.50 (0.38)		0.56 (0.37)

SSI/child care			0.13 (0.42)		0.17 (0.42)
SSI/job			0.30 (0.56)		-0.52 (0.76)
SSI/transportation			-1.63 (1.14)		-1.69 (1.16)
SSI/clothing			28.11 (53589.78)		27.09 (40227.48)
Medicaid/child care			0.30 (0.52)		0.36 (0.52)
Medicaid/job			-0.84 (0.56)		-0.81 (0.56)
Medicaid/transportation			1.58 (1.17)		1.54 (1.18)
Medicaid/clothing			29.30 (54470.47)		28.84 (44121.40)
Child care/job			0.58 (0.69)		0.52 (0.69)
Child care/transportation			9.69 (2671.32)		9.43 (1815.62)
Child care/clothing			58.04 (251316.9)		57.60 (592435.90)
Job/transportation			2.13* (1.23)		2.18* (1.24)
Job/clothing			-58.19 (251294.8)		-57.08 592419.10
Transportation/clothing			-54.95 (256479.6)		-55.55 (594234.50)
Minimal				0.06 (0.15)	0.09 (0.16)
Limited				-0.05 (0.16)	-0.03 (0.17)
Conservative				0.10 (0.27)	0.11 (0.28)
Generous				0.12 (0.16)	0.15 (0.16)
Rho	0.339 (0.117)	0.549 (0.031)	0.562 (0.031)	0.548 (0.031)	0.560 (0.031)
<p>-The standard deviation is shown in parenthesis beneath the coefficients.  ***indicates statistical significance at the 99% level  ** indicates statistical significance at the 95% level  * indicates statistical significance at the 90% level</p>					

## Hours results

Table 4.2 contains the results from the five regression specifications on the hours a woman worked in a year. They parallel the specifications used in the employment regression. The five different specifications used to measure the impact the independent variables have on hours worked have a slightly worse fit than the specifications that estimate the propensity to work. They predict about forty percent of the variation. The specification that includes only personal variables has a better fit than the specifications that include welfare. Similar to the employment regressions, the equations that include interacted welfare sets have a slightly better fit than the equations that only model welfare programs individually. The specification with the best fit, however, is the baseline model. It is unclear why the welfare specification would have a lower constructed R-squared than the baseline specification for the Tobit model.

In these regressions, the group of personal variables, non-interacted welfare variables, and interacted welfare variables are each jointly significant. The equation that includes all three of these groups of variables is the best specification for predicting the impact of welfare programs on hours worked. However, using the Wald test, holistic state variables are not jointly significant. Thus, I will focus the discussion of the results on the specification that excludes holistic state variables.

Personal characteristics have similar results as in the probit model measuring one's probability of working, described above.

Basic needs support subsidies have a consistently negative and statistically significant impact on hours worked. Receiving food assistance indicates a reduction

in hours worked by about 473 hours a year. TANF reduces recipients' hours by about 373 hours per year. SSI's impact is less robust, decreasing hours by about 305 per year. When women combine SSI and TANF the negative impact of the subsidy set on hours worked increases. The amount of hours recipients work per year decreases by almost 860 in addition to the decrease from the individual subsidies.

Housing assistance, heating assistance, and Medicaid consistently lower one's hours worked. Recipients who receive housing assistance tend to work approximately 395 hours less than non-recipients. The negative impact of receiving housing assistance and SSI is offset by about 435 hours when recipients combine the two programs. Perhaps, housing assistance provides enough stability to SSI recipients, so that combining the two types of assistance actually helps recipients maintain higher employment levels. Heating assistance recipients work approximately 425 hours less than non recipients. When heating assistance is combined with food assistance, the negative impact of both subsidies on hours worked is offset by about 255 hours. Recipients of either heating assistance or food assistance work less than those who do not receive these subsidies. Combining heating assistance and food assistance somewhat offsets the joint negative effects of the subsidies individually on hours. Medicaid recipients work about 460 hours less per year than non-Medicaid recipients.

Employment support subsidies have a less consistent impact on the hours a woman works. Child care subsidies are the only subsidy that consistently and statistically significantly increase the number of hours worked. Child care assistance

recipients work about 500 more hours a year than those who do not receive child care assistance.

Job assistance also has a positive impact on hours. However, it is only statistically significant in the non-interacted welfare specification in which job assistance recipients work approximately 220 more hours than those who do not receive job assistance. This indicates that job assistance is most effective when combined with other subsidies.

Transportation assistance, on the other hand, has consistent and statistically significant negative impacts on hours worked. Recipients of transportation assistance work about 540 hours less than individuals who do not receive transportation assistance. Combining transportation assistance and TANF exacerbates the negative impact on the hours worked of the individual subsidies by almost 720 hours. This might be because recipients of both transportation assistance and TANF have a statistically significantly high reliance on the government, so that the combination allows recipients to increase consumption without sacrificing leisure. On the other hand, when transportation assistance is combined with heating assistance, the impact is offset by approximately 665 hours. This does not offset the combined negative effect of transportation assistance and heating assistance. However, combining job assistance and transportation assistance, offsets the negative impact of transportation assistance and the statistically insignificant impact of job assistance. When this occurs, the number of hours an individual works by approximately 170 hours a year. Providing a woman with both assistance at obtaining a job and a method for getting to that job, as seen in the regression calculating employment, seems to provide enough



stability that recipients increase the hours they work, while alone each subsidy is independently insufficient.

Clothing assistance has no statistically significant impact on hours worked. Although statistically insignificant, the signs change on the coefficient from the non-interacted subsidy specification to the interacted subsidy specification. Combining transportation assistance with clothing assistance has the largest statistically significant negative impact, reducing recipients' hours of work by an incredible amount. Transportation assistance and clothing assistance might indicate that a recipient is too reliant on government support to become self sufficient. However, the magnitude of the results indicate that there are other factors that impact the number of hours worked by recipients of transportation assistance and clothing assistance that are not accounted for in this model. As discussed previously, the category of assistance (employment support or basic needs support) that both clothing subsidies and transportation subsidies provide is unclear. Still, this unexpected result should be further researched to understand its implications.

Conversely, the combination of child care assistance and clothing assistance, conversely, increases the positive impact of receiving child care assistance, increasing the amount of hours recipients work by 3297 hours. Individuals who might receive work clothes and stable child care could increase their effective wage, which causes a large substitution effect and results in more hours worked. Again, the magnitude of this result indicates that the hours of work by recipients of clothing assistance and child care assistance are probably impacted by other factors not accounted for in this model.

As in the employment regression, the holistic state variables are both individually and jointly insignificant. The variability in state laws, at least as grouped by Meyers *et al.* (2001), does not seem to impact the hours an individual works.

	Personal Coefficients	Personal and Welfare	Personal, welfare, and interactions	Personal, welfare, and holistic	Personal, welfare, interactions, and holistic
Age	75*** (25)	61*** (24)	54** (23)	60*** (24)	54** (24)
Age squared	-1*** (0)	-1*** (0)	-1*** (0)	-1*** (0)	-1*** (0)
Child age	28*** (5)	27*** (5)	27*** (5)	27*** (5)	27*** (5)
Cohabit	-538*** (63)	***-776 (62)	-747*** (64)	-776*** (62)	-748*** (64)
Education	-6 (8)	-9 (8)	-8 (8)	-9 (8)	-8 (8)
Number of Children	-101*** (23)	-52** (22)	-49** (22)	-52** (22)	-50** (22)
Race	-194** (87)	-236*** (78)	-231*** (78)	-243*** (80)	-235*** (80)
Urban	76*** (58)	34 (55)	30 (55)	28 (56)	27 (56)
D1998	194*** (61)	168*** (58)	169*** (58)	165*** (58)	168*** (58)
D2000	221*** (54)	182*** (53)	184*** (53)	180*** (53)	183*** (53)
D2002	133*** (52)	112** (51)	116** (50)	111** (51)	115** (50)
Food		-511*** (53)	-473*** (91)	-511*** (53)	-474*** (91)
Housing		-155*** (63)	-396*** (142)	-154*** (63)	-395*** (142)
Heating		-186*** (70)	-425*** (143)	-188*** (71)	-427*** (143)
TANF		-582*** (86)	-373* (226)	-585*** (86)	-377* (226)
SSI		-323*** (96)	-305*** (99)	-326*** (97)	-296*** (100)
Medicaid		-212** (94)	-460*** (167)	-213** (94)	-460*** (166)
Child care		337*** (91)	499** (213)	337*** (91)	502** (211)
Job		220* (120)	188 (287)	220* (120)	241 (255)
Transportation		-315** (142)	-537* (280)	-313** (142)	-546** (280)
Clothing		-145 (252)	691 (677)	-145 (253)	664 (677)
Food/Housing			-161 (120)		-158 (120)
Food/Heating			257* (144)		261* (144)
Food/TANF			-97 (227)		-96 (227)
Food/SSI			-39		-40

			(105)		(105)
Food/Medicaid			-148 (216)		-163 (216)
Food/Child care			132 (190)		127 (191)
Food/job			338 (305)		345 (302)
Food/transportation			-337 (410)		-345 (410)
Food/clothing			-849 (1065)		-802 (1069)
Housing/heating			-50 (156)		-53 (157)
Housing/TANF			41 (176)		42 (176)
Housing/SSI			435*** (147)		432*** (147)
Housing/Medicaid			304 (236)		316 (233)
Housing/child care			-240 (192)		-237 (193)
Housing/job			-229 (269)		-270 (267)
Housing/transportation			235 (312)		248 (311)
Housing/clothing			-480 (750)		-525 (757)
Heating/TANF			-26 (208)		-27 (209)
Heating/SSI			87 (156)		86* (155)
Heating/Medicaid			304 (235)		309 (236)
Heating/child care			-274 (228)		-274 (227)
Heating/job			335 (279)		301 (280)
Heating/transportation			664* (368)		689* (366)
Heating/clothing			-132 (1414)		-106 (1423)
TANF/SSI			-857*** (265)		-848*** (265)
TANF/Medicaid			69 (321)		81 (321)
TANF/child care			123 (240)		125 (240)
TANF/job			-371 (314)		-408 (315)
TANF/transportation			-717* (429)		-711* (429)
TANF/clothing			962 (713)		1022 (719)
SSI/Medicaid			260 (213)		256 (205)

SSI/child care			-225 (216)		-229 (213)
SSI/job			-29 (290)		-402 (469)
SSI/transportation			-822 (614)		-825 (619)
SSI/clothing			-605 (810)		-611 (809)
Medicaid/child care			148 (264)		164 (265)
Medicaid/job			-222 (285)		-228 (286)
Medicaid/transportation			681 (455)		674 (448)
Medicaid/clothing			337 (1141)		352 (1143)
Child care/job			-227 (291)		-245 (292)
Child care/transportation			482 (381)		489 (381)
Child care/clothing			3297** (1436)		3627** (1487)
Job/transportation			708* (375)		686* (376)
Job/clothing			-613 (791)		-628 (795)
Transportation/clothing			-4795*** (1803)		-5125*** (1853)
Minimal				3 (95)	31 (95)
Limited				-90 (101)	-65 (102)
Conservative				21 (170)	49 (170)
Generous				-11 (98)	19 (98)
Rho	0.451 (0.021)	0.415 (0.373)	0.421 (0.022 )	0.415 (0.022)	0.420 (0.022)
<p>-The standard deviation is shown in parenthesis beneath the coefficients.  ***indicates statistical significance at the 99% level  ** indicates statistical significance at the 95% level  * indicates statistical significance at the 90% level</p>					

## Earnings Results

Table 4.3 contains the results of the five specifications for the earnings regression. It parallels the specifications used in the employment regression and the hours regression. The results from measuring earnings have a slightly lower fit than the regressions measuring employment and hours worked. The welfare equations account for about 37 percent of the variation in the specifications looking at earnings. Similar to the hours regression, the baseline specification has the best fit of all the specifications. Again, it is unclear why the welfare specification would have a lower constructed R-squared than the baseline specification for the Tobit model.

The sets of personal coefficients, welfare coefficients, and welfare interaction coefficients are all jointly significant. The equation that includes all three of these groups of variables is the best specification for predicting the impact of welfare programs on earnings. However, using the Wald test holistic state variables are not jointly significant. The focus of the results will, therefore, concentrate on the specifications excluding the holistic state variables.

Most of the personal characteristics indicate results similar to the regressions with employment and hours. However, the age of the youngest child does not statistically significantly impact a woman's earnings. The level of education also differs in the earnings regression from the employment and hours worked regressions by having an expected impact: higher education yields higher earnings. Unlike the employment and hours regressions, women's earnings have no relationship to the year in which the data are collected.

As was seen in most studies addressing the earnings of welfare recipients, basic needs supports typically reduce earnings when welfare programs are considered individually. Receipt of food assistance, TANF, and SSI consistently lower earnings. In the specification with welfare interaction variables, food assistance decreases earnings by almost \$3,200, TANF decreases earnings by \$8,100, and SSI decreases earnings by \$8,800. TANF seems to be failing to move recipients towards self sufficiency, despite its work requirements and time limits. But, if these work incentives do move people from welfare to work, then the benefits of this model may not capture the benefit of this program. Those combining TANF and work are earning less than those working without receiving TANF. Perhaps this is due to reverse causality.<sup>43</sup> SSI is more likely an indicator of having a disability than providing a work disincentive. In a more comprehensive welfare system, when other forms of assistance are also provided to those with disabilities, one could expect SSI to have a lower negative impact than when considered in a non-interacted welfare system. Yet when recipients combine SSI and TANF, the marginal impact on their income drops by over \$12,000. This reduces the impact of SSI and TANF on earnings. As mentioned previously, perhaps this is due to time varying heterogeneity that is not captured in this model.

Housing assistance, heating assistance, and Medicaid are not statistically significant in all the regression specifications. Heating assistance never statistically significantly impacts earnings, while housing assistance and Medicaid have a negative effect of about \$2,200 and \$1,100, respectively, in a non-interacted welfare

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<sup>43</sup> As mentioned previously, although lagging the variables might help account for reverse causality, I was unable to lag the dependent variables with the welfare variables because of data limitations.

system. Housing assistance no longer has a statistically significant impact on earnings in the non-interacted welfare specification. However, when a recipient combines housing assistance with child care assistance, her earnings increases by about \$4,800 more than if she received the subsidies individually. This indicates that housing assistance may contribute to self sufficiency in a comprehensive welfare system that supports work. Heating assistance does not always statistically significantly impact earnings, perhaps because it is not strongly connected to work incentives. Medicaid also has a statistically insignificant impact on earnings.

None of the employment support subsidies have a consistently statistically significant impact on earnings. When only non-interacted welfare subsidies are included in the regression, child care assistance and job assistance increase earnings by about \$3,500 and \$3,300, respectively. However, when child care assistance and job assistance are combined in the interacted welfare specification, as a set they decrease earnings by about \$6,800. This negative impact offsets the positive value of child care assistance. This result is unexpected and should be further studied. As mentioned above, although child care assistance has a statistically insignificant impact when interacted subsidy sets are considered, together child care assistance and housing assistance (which also has a statistically insignificant impact on earnings in regressions that include subsidy programs) have a positive and statistically significant impact. This suggests that child care assistance and housing assistance jointly increase one's earnings, perhaps due to the added stability of having secure living arrangements.



Oddly, clothing assistance has a negative impact on earnings of over \$6,500 when only non-interacted subsidies are included. But when clothing assistance is considered with non-interacted subsidies, welfare interactions, and personal characteristics, it is no longer statistically significant. Yet, the impacts that SSI and clothing assistance have, when combined, are large enough to offset the negative impacts of receiving SSI and clothing assistance independently in an interacted welfare system. The joint support of SSI and clothing assistance help recipients move towards self sufficiency.

Transportation assistance, on the other hand, is only statistically significant when interacted subsidy sets are considered. It increases earnings by about \$7,000. Yet, when transportation assistance is combined with clothing assistance, the negative impact of about \$38,000 offsets the positive impact of transportation assistance and has the largest negative impact on earnings. Transportation assistance and clothing assistance, again, might indicate that a recipient is too reliant on government support to become self sufficient. However, as with the regressions measuring hours, the magnitude of the impact of this subsidy set indicates that the model is not isolating the impact of this subsidy set. Further research on more specific clothing assistance, however, might offer a more elaborate explanation. On the other hand, when transportation assistance is combined with job assistance the combination has the highest statistical significant impact on earnings more than other programs and program combinations. It raises income by about \$21,000. Again, the magnitude of this subsidy set is incredible. As seen in the previous regressions, those who receive both job assistance and transportation assistance are able to earn more than those

receiving either subsidy alone. The joint support enables recipients to earn more money than those receiving only one form of assistance or no assistance.

Again, the holistic variables that accounted for a state's welfare programs were individually and jointly statistically insignificant.

	Personal Coefficients	Personal and Welfare	Personal, welfare, and interactions	Personal, welfare, and holistic	Personal, welfare, interactions, and holistic
Age	1080*** (336)	1028*** (321)	1005** (322)	1018*** (321)	1009*** (322)
Age squared	-18*** (5)	-17*** (4)	-17*** (4)	-17*** (4)	-17*** (4)
Child age	75 (71)	71 (70)	79 (70)	70 (70)	80 (70)
Cohabit	-4549*** (843)	-6706*** (848)	-6500*** (892)	-6708*** (851)	-6508*** (894)
Education	472*** (110)	429*** (106)	455*** (106)	432*** (106)	454*** (106)
Number of Children	-879*** (311)	-659** (303)	-682** (303)	-670** (304)	-691** (304)
Race	-3577*** (1118)	-3998*** (1046)	-3913*** (1051)	-4114*** (1062)	-3979*** (1067)
Urban	-364 (778)	-566 (757)	-514 (760)	-652 (768)	-598 (771)
D1998	-841 (825)	-806 (816)	-931 (816)	-803 (817)	-940 (818)
D2000	-169 (743)	-280 (740)	-284 (740)	-253 (741)	-278 (741)
D2002	-498 (713)	-508 (712)	-492 (709)	-500 (712)	-496 (709)
Food		-2750*** (746)	-3172*** (1254)	-2706*** (747)	-3112*** (1250)
Housing		-2200*** (869)	154 (1909)	-2228* (869)	187 (1906)
Heating		-777 (979)	-2157 (1985)	-880 (985)	-2206 (1987)
TANF		-5697*** (1198)	-8130** (3274)	-5773*** (1202)	-8265*** (3275)
SSI		-9309*** (1382)	-8815*** (1425)	-9248*** (1383)	-8830*** (1445)
Medicaid		-1106** (1313)	-954 (2312)	-1145 (1314)	-750 (2292)
Child care		3448*** (1284)	4713* (3017)	3403*** (1284)	4877* (2993)
Job		3254 ** (1678)	6273 (3996)	3238** (1677)	4851 (3516)
Transportation		2901 (1959)	6999* (3726)	2902 (1958)	6870* (3730)
Clothing		-6806* (3610)	-8987 (10022)	-6907* (3610)	-8859 (10047)
Food/Housing			-443 (1670)		-431 (1670)
Food/Heating			103 (2020)		130 (2020)
Food/TANF			4935. (3304)		4992 (3304)

Food/SSI			1067 (1436)		1024 (1434)
Food/Medicaid			766 (2980)		685 (2978)
Food/Child care			-1439 (260-)		-1460 (2689)
Food/job			-4742 (4301)		-5284 (4227)
Food/transportation			-8077 (5275)		-8126 (5276)
Food/clothing			-1801 (14418)		-2225 (14551)
Housing/heating			-2202 (2178)		-2126 (2182)
Housing/TANF			796 (2459)		807 (2459)
Housing/SSI			-2677 (1972)		-2754 (1967)
Housing/Medicaid			1732 (3285)		2135 (3242)
Housing/child care			4748* (2726)		4748* (2726)
Housing/job			4021 (3778)		3578 (3757)
Housing/transportation			-6070 (4353)		-5957 (4348)
Housing/clothing			-9474 (10004)		-9086 (10122)
Heating/TANF			-1420 (2935)		-1387 (2940)
Heating/SSI			2881 (2151)		2778 (2147)
Heating/Medicaid			1164 (3321)		958 (3317)
Heating/child care			-1405 (3194)		-1178 (3181)
Heating/job			-507 (3924)		-283 (3917)
Heating/transportation			2087 (5193)		1894 (5176)
Heating/clothing			1705 (19769)		2508 (19779)
TANF/SSI			-12022*** (3711)		-11884*** (3717)
TANF/Medicaid			4392 (4457)		4441 (4466)
TANF/child care			-688 (3382)		-506 (3379)
TANF/job			-4800 (4495)		-5187 (4499)
TANF/transportation			-3314 (5761)		-3256 (5764)
TANF/clothing			10002 (11622)		9905 (11760)
SSI/Medicaid			-1060		-1644

			(2929)		(2830)
SSI/child care			-1517 (3067)		-1810 (3026)
SSI/job			-2698 (4098)		508 (6172)
SSI/transportation			-154 (6950)		369 (6928)
SSI/clothing			18643* (11386)		17865 (11373)
Medicaid/child care			844 (3658)		864 (3662)
Medicaid/job			-1362 (3985)		-1199 (3993)
Medicaid/transportation			-4714 (6506)		-4085 (6416)
Medicaid/clothing			-6340 (15027)		-6033 (15030)
Child care/job			-6767* (4146)		-6697 (4162)
Child care/transportation			1640 (5190)		1763 (5187)
Child care/clothing			25940 (18515)		24815 (18831)
Job/transportation			20591*** (5300)		20512*** (5319)
Job/clothing			-9996 (12088)		-10259 (12186)
Transportation/clothing			-38115** (18630)		-37577** (18919)
Minimal				-1248 (1265)	-1053 (1272)
Limited				-1080 (1352)	-895 (1363)
Conservative				-342 (2268)	-625 (2281)
Generous				-676 (1302)	-686 (1314)
Rho	0.414 (0.022)	0.362 (0.023)	0.373 (0.023)	0.361 (0.023)	0.372 (0.023)
<p>-The standard deviation is shown in parenthesis beneath the coefficients.  ***indicates statistical significance at the 99% level  ** indicates statistical significance at the 95% level  * indicates statistical significance at the 90% level</p>					

## **Discussion**

Although the results vary based upon the model and specification, the differing effects of interacting subsidies are worth highlighting. While most previous research approaches the welfare system through a non-interacted subsidy framework, most recipients utilize a comprehensive welfare program. Combining most subsidies does not have an additional marginal impact on employment participation, hours worked, and earnings beyond the individual subsidies. However, combining certain subsidies changes the impact of receiving individual subsidies. Across dependent variables, sets of subsidies that are statistically significant have similar impacts. In the remainder of the chapter, I will expand on those combinations that strengthen the impacts of the individual subsidies when utilized as a set, that become statistically significant only when combined, and that offset the impact of the individual subsidy upon combination.

As explained above, combining TANF and SSI across each dependent variable: food assistance and housing assistance in employment, TANF and transportation assistance in hours, and transportation assistance and clothing assistance in hours, exacerbates the negative impact of receiving the subsidies independently. Perhaps because cash assistance does directly not target stability and self sufficiency, increasing cash assistance reduces a woman's work incentives. On the other hand, dual receipt of SSI and TANF might serve as an indicator that a woman has a disability that requires extra support or, that an individual has encountered an external factor for which this model does not account, that

simultaneously causes her to enroll in SSI and TANF and reduce her employment participation.

Food assistance and housing assistance independently reduce a woman's propensity to work. When combined, the effect is exacerbated. Combining food assistance with housing assistance might provide enough support from the government that a woman does not need to participate in employment at the same level.

TANF and transportation assistance, and transportation assistance and clothing assistance also magnify the reduction in hours. The distribution of transportation assistance and clothing assistance, however, is unclear based on the question asked in the PSID. Perhaps transportation assistance is not necessarily provided as transportation to work and clothing assistance is not necessarily distributed as work clothes. If women are receiving clothing assistance for their children, they might reduce their hours worked because this additional basic need expense is covered (similar to food assistance). Again, further research on clothing assistance and transportation assistance might indicate how this assistance can be directed to increase employment, hours worked, and earnings.

The only subsidy set that statistically significantly increases the positive impact of two subsidies is child care assistance and clothing assistance which increases the hours a woman works. As mentioned previously, if a woman can receive child care support and clothes for work, her cost of working is reduced. Therefore she may allot more hours to employment. Still, the focus of clothing assistance is relatively ambiguous and this result must be interpreted with caution.

Other subsidies only have a statistically significant impact on employment participation, hours, and earnings when they are combined. When recipients receive certain subsidies independently, there is no statistically significant impact on the dependent variables, but when recipients utilize the subsidies as sets they become statistically significant. Transportation assistance and job assistance, when combined, increase recipients' employment rate, hours worked, and earnings. Alone, transportation assistance is either negative or statistically insignificant and job assistance is either positive or statistically insignificant, depending on the specification and dependent variable. Providing a woman with both assistance in finding work and a means of getting to her job has, as expected, increased her likelihood of working, the hours she works, and her earnings. Similarly, providing a woman with housing assistance and child care assistance provides her with stable child care and a stable home which increases her earnings. Housing assistance might provide stability and security because she can maintain a home despite her earnings. Child care assistance increases her effective wage and also helps make her a more reliable worker. Lastly, child care assistance and job assistance, are also statistically insignificant, but when combined, reduce a woman's earnings. In the single subsidy specifications, child care assistance and job assistance both have a positive and statistically significant impact on earnings. Yet, they are statistically insignificant in the specification that includes welfare interaction terms. This combination should be further studied.

Finally, and perhaps most interesting, are those combinations of subsidies that mitigate the impact of an individual subsidy. These combinations require further



study, and, depending on the goals of policy makers, might provide an innovative approach to providing welfare. When child care recipients utilize heating assistance, the positive impact of child care assistance on earnings is mitigated. If child care assistance has mixed impacts on employment based upon what it is combined with, these subsidy sets should be identified. Food assistance and heating assistance offset the negative impact of receiving either independently on hours worked. The combined effect does not increase the hours worked, but merely reduces the combined negative effect of both. Lastly, transportation assistance and clothing assistance offset the positive impact of transportation assistance on earnings. As mentioned previously the purpose of providing transportation assistance and clothing assistance is unclear and requires further study to understand the implications of these results.

The most consistent trends in combination sets that this study recognizes are combining SSI with subsidies that provide stability and combining housing assistance with employment support subsidies. SSI recipients who combine certain support based subsidies (other than cash assistance) tend to increase their probability of working, the hours they work, and their earnings. Combining housing assistance with SSI increases an SSI recipient's propensity to work and the hours she worked. Heating assistance also increases an SSI recipient's hours worked. Clothing assistance increases her earnings. This seems to indicate that providing those with disabilities directed stability support through subsidies increases their ability to engage in the labor force. Likewise, providing transportation assistance or child care assistance to a recipient of housing assistance increases her propensity to work and

her earnings. The same argument follows that providing recipients with stability through housing assistance and higher effective wages through employment supports has a positive work incentive. Additional research should further identify those combinations and factors that impact SSI recipients' and housing assistance recipients' likelihood to work and move towards self sufficiency.

## **Conclusion: Looking Ahead**

This study begins to examine the importance of studying the interaction between programs and their effects on employment participation, hours worked, and self sufficiency (represented here by earnings). The PSID provides a useful starting place for a national study of a comprehensive welfare system. Further research that would utilize state administrative data would be helpful for providing a more localized focus. Other forms of government assistance, especially the Earned Income Tax Credit, most likely have statistically significant and important impacts on recipient's work incentives and combinations that we were not able to uncover in these data. As discussed previously, more specific information on the use of transportation assistance and clothing assistance would help in differentiating basic needs support from employment support.

The implied causality in this study, as well as similar studies, must be critically interpreted. Receiving certain subsidies might signal time varying factors that could indicate a crisis that had reduced one's employment, hours worked, or earnings and simultaneously caused a person to turn to the government for assistance. Variables that indicate these types of circumstances such as the health level of an individual and their family members might indicate such varying heterogeneity that the probit and Tobit panel data models are unable to recover.

After acknowledging the issues of causality, focusing on welfare packages that maximize a woman's propensity to work, hours worked, and earnings, still falls short of a woman's achieving self sufficiency if self sufficiency is defined as earning above the poverty level and not receiving government assistance. Among low wage

working women this seems almost impossible. The average working woman in this sample works 32 hours a week, fifty weeks a year, and has two children. A single woman in 2004 must earn at least \$9.57/hour to be above the poverty line of \$15,219. Additionally, assuming only one of her two children is of school age, she must cover the cost of child care from her earnings. At an average yearly cost of \$6,800 for child care in 2004 (National Association of Child Care Resources and Referral Agencies 2008), this woman must dedicate \$4.25 of her hourly earnings to child care for a net earnings of \$8,419. An adult from a cohabiting/married single-earner household with two children would need to earn \$12.28/hour, assuming that the other adult provides child care, to be at the poverty line of \$19,157 (U.S. Census Bureau 2006). An alternative measure of self sufficiency, used in this study, considers a woman to be low-income if her earnings are 150 percent of the poverty line or less, because certain public assistance is still available for households whose income is up to 150 percent of the poverty line. For a single woman with two children to earn enough to move her above the low-income line, she must earn over \$14.35/hour and cover the costs of child care. A cohabiting/married woman must earn \$18.07/hour to no longer be considered low-income. With the minimum wage rate at \$5.15 in 2004, there is a large gap between achieving self sufficiency and achieving minimum wage employment.

Thus, low-income individuals would need to earn significantly more than the minimum wage to become self sufficient. Under the current definitions of self sufficiency, it seems nearly impossible for welfare recipients to reach that threshold. These structural and systematic discrepancies between self sufficiency and the

working poor force me to question the notion of self sufficiency under these guidelines. Perhaps, instead, we might look towards other OECD (Organization for Economic Co-operation and Development) countries that have significantly lower rates of poverty as models for redefining self sufficiency. The U.S. varies from most other OECD countries in its lack of universal health care coverage (Physicians for a National Health Program 2008). Instead, recipients of Medicaid are viewed as dependent on the government. If health insurance was redefined as a universal right, instead of being means-tested, household spending on medicine would not reduce a household's net earnings and perhaps bring them towards self sufficiency.

The results of this thesis, however, do not link the receipt of Medicaid to higher earnings. Rather, providing child care assistance directly and significantly reduces the cost of working. Again, many OECD countries provide heavily subsidized child care, and/or paid parental work leave, and/or universal pre-school (Waldfogel 2001). Rather than providing means-testing subsidized child care and labeling it as government dependence, child care subsidies should be considered a universal right, similar to the right to public supported schooling from Kindergarten to twelfth grade. Child care assistance significantly reduces working expenses and helps women maintain steady employment. This redefinition of self sufficiency would reduce the burden of employment for working parents and increase their likelihood of achieving self sufficiency under this new definition.

Currently, government assistance is vital for moving low-income women towards self sufficiency. Reframing government assistance to eliminate categorizing certain forms of assistance as welfare would allow low-income women to reduce their

reliance on means-tested basic needs assistance and move towards self sufficiency.

Policy makers must clearly define their goals in providing government support and

further research must be conducted to enable these goals to be reached.

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