Employment and Earnings of Child-Care Subsidy Recipients in Harris County, Texas

Jerome A. Olson
Deanna T. Schexnayder

June 2002

Ray Marshall Center for the
Study of Human Resources

Table of Contents

List of Tables

List of Figures

Executive Summary

This paper examines the major reasons for subsidized child care receipt among current and former welfare recipients in Harris County, Texas, between mid-1995 and mid-1999. For the most part, poor people receive subsidized child care because of either employment or engagement in workforce development activities. The time period of the study was chosen so that significant periods before and after welfare reform could be observed. The welfare reforms that were enacted during this period included the Federal Personal Responsibility and Work Opportunity Act (PRWORA) legislation and the Texas legislation that resulted in the state's welfare waiver, known as the "Achieving Change for Texans" (ACT) waiver.

This document reports on the estimation of a statistical model developed to determine the factors associated with the likelihood of employment (as opposed to training) as well as earnings, for recipients of subsidized child care who were current or former welfare clients. The model has previously been applied in Miami-Dade County, Florida for the period March 1996 to February 1998 and in the state of Massachusetts for the period July 1996 to August 1997. The primary purpose of fitting the model to data from Harris County is to test the generality of the model by comparing the results of fitting the model in this time and place to the results from the other two locations and time periods.

As a necessary condition of receiving subsidized child care, one must either be employed or engaged in some other activity that makes one eligible. Among the unemployed, the most common reason for receiving subsidized child care is participation in workforce development activities. For those contemporaneously receiving Temporary Assistance for Needy Families (TANF, formerly Aid to Families with Dependent Children, AFDC), these activities would be provided by the Choices program (formerly the JOBS program). Among the non-TANF unemployed, the Job Training Partnership Act (JTPA) would provide eligible activities, the Workforce Investment Act (WIA), and Food Stamp Employment and Training (E&T). Advanced statistical techniques were

used to identify the variables associated with the likelihood that recipients of subsidized child care would be employed as opposed to receiving workforce development services.

Our findings can be summarized as follows:

(1) Policy changes such as welfare reform, funding levels, and changes in administrative organization were shown to have predictable influences on employment and earnings.
(2) Personal attributes such as a client's number of children, age, and employability were also shown to influence employment outcomes.
(3) Employment growth in the economy influences employment and earnings of subsidized child care recipients.

Policy. It was discovered that both welfare and child care policy are important predictors of employment. Variables modeling various aspects of PRWORA and ACT waiver were generally significant and of the expected sign. Other dimensions of significant policy influence included co-payment levels, devolution of administration, funding levels, the earned income tax credit, and the implementation of diversion programs.

Personal Attributes. It was found that the personal attributes of the casehead and the casehead's family also mattered. The results shown here, combined with the previous results, indicate that most of the socio-demographic variables that influence employment and earnings do so in similar ways in the three sites. Age, race, number of children, education, gender, and employability were significant predictors of employment and earnings in most of the specifications in all three papers. This similarity was found even though the populations and policy environments differed substantially between the sites.

The Economy. Including employment growth rates for selected industries in the statistical model tested the influence of the economy. Results indicated that employment growth in the non-durables manufacturing industry induced a greater probability of employment and increased earnings among those employed. In contrast, growth in the Services industry was not related to the probability of employment, but was significantly associated with *decreased* earnings. This outcome can probably be attributed to shorter hours and lower wages prevalent in the Services industry.

I.   Introduction

The purpose of this research is to apply to Harris County, Texas, a statistical model developed elsewhere to estimate the likelihood that recipients of subsidized child care are employed as opposed to participating in workforce development. A parallel model is also applied, for those who are employed, to predict level of earnings. These models have been successfully applied to subsidized child care recipients in two other locations:

> (1) by Queralt, Witte, and Griesinger (2000, hereinafter QWG) for recipients in Miami-Dade County, Florida covering the period March 1996 to February 1998, and
>
> (2) by Lemke, Witte, Queralt, and Witt (2000, hereinafter LWQW) for recipients in the state of Massachusetts covering the period July 1996 to August 1997.

The primary purpose of fitting the model to data from Harris County is to test the generality of the model by comparing the fit of the model in this time and place relative to that of the two previously studied locations and time periods.

The structure of the model is straightforward. In order to receive subsidized child care, the caretaker must either be working or engaged in a Temporary Assistance for Needy Families (TANF)-related workforce activity. The dependent variables are employment indicators—a binary variable for employment, and a continuous variable for wages earned. The tradeoff that exists between being employed and engaging in workforce development activities, as well as the level of earnings of those who are employed, are assumed to depend on an assortment of independent variables that represent policy, environment, and personal influences.

Model Development in Prior Research

As in the studies mentioned above, QWG and LWQW, the present model was used to examine the activities of current and former welfare recipients who were receiving subsidized child care. In all three studies, recipients were only studied while they were receiving subsidized child care, and thus no conclusions regarding the *effects*

of child care receipt could be drawn. Instead, the studies reveal what factors are associated with the tradeoff between employment and workforce development among those receiving subsidized child care. Since the model applied here has essentially the same structure as the models developed previously, they are described briefly, and attention is called to areas in which the present application differs. For a more detailed explanation of the common components of the models, the reader is referred to QWG and LWQW.

Florida

The Miami-Dade County study, QWG, constructed a longitudinal database of the employment and earnings of current and former welfare recipients who received subsidized child care during a 24 month period. Overall, QWG found evidence that large increases in funding for subsidized child care during the period of study were associated with higher proportions of recipients being employed. Additional findings are offered that could potentially guide future policy:

➤ Administration of child care programs can significantly influence the overall earnings of working current and former welfare recipients.

➤ Public and administrative welfare policy changes not specifically related to the child care subsidy system, individual and family characteristics, conditions in the local labor market, and the type of community in which the family lives influence the likelihood of employment and earnings of the family.

➤ Implementation of federal and state policy occurs at different times and in varying ways in distinct local areas. Thus, researchers must observe and take into account how changes can play out in each local area.

Massachusetts

The Massachusetts study, LWQW, examined employment and *work hours* of current and former welfare recipients who received child care subsidies within a 13 month period. Like QWG, these researchers modeled effects of the availability of subsidized child care, but included additional measures of how the availability of

education affects the probability of work and hours of work among the study population. The findings are in many ways consistent with past research, but also add to the growing literature in the area:

> Increases in the cost of child care are significantly associated with a decrease in the probability that subsidized child care recipients will work. This is consistent with past research but the study also found that the stability and quality of child care have greater effects on the probability of work than does cost.

> As in prior findings, increases in the funding for child care subsidies and the availability of full day kindergarten are associated with increases in the probability that recipients will work.

> The availability of part-day or part-year Head Start and pre-Kindergarten decreases the probability that recipients in this study work. The consequent increase in the probability that these recipients are involved in education and training suggests that such programs are more compatible with a part time schedule.

Applying the Model to Harris County

Demographics

With a year 2000 population of 3.4 million people, Harris County is the most populous county in Texas. The racial composition of the population is listed in Table 1. Racial and ethnic minorities comprise the majority of the population. The non-Hispanic White population is the largest racial group in the county, but it comprises less than 50 percent of the population. In the City of Houston, the majority racial-ethnic group is Hispanic (of any race).

Table 1:
Harris County and Houston Population by Racial and Ethnic Categories

	Harris County		City of Houston	
	Number	Percent	Number	Percent
Non Hispanic White	1,432,264	42	601,851	31
Non Hispanic Black	619,694	18	487,851	25
Non Hispanic Other	228,896	7	133,064	7
Hispanic (of any race)	1,119751	33	730,865	37
Total	3,400.578	100	1,953,631	100

Source: PL94-171 Redistricting Data File, Bureau of the Census, 2000.

Economy

Harris County is a major industrial center and seaport. The petroleum refining and petrochemical facilities in the area are among the largest in the country. Other major economic activities include manufacturing and corporate management. The Port of Houston provides access to maritime shipping for many of the agricultural products grown in the Midwest, as well as for the refined petroleum and other petrochemicals produced locally. Table 2 shows the composition of employment in the county by major industrial groups.

Table 2:
Employment by Major Industry, Houston, Texas—June 1999

Total Non-Farm	2,028,600
Mining	62,800
Construction	146,900
Manufacturing	209,600
Durable Goods	125,200
Non-Durable Goods	84,400
Transportation and Public Utilities	145,800
Trade	463,900
Finance, Insurance and Real Estate	113,400
Services	627,300
Government	258,900

Source: Bureau of Labor Statistics

During the July 1995 to June 1999 study period, the Houston Metropolitan Statistical Area (MSA) was characterized by steady growth in economic activity, population, and employment. In the mid-eighties, the city was hit hard by the collapse of oil prices. The city actually lost population after the price of oil collapsed in 1986. However, by the beginning of the period of study the city was well into recovery, with total employment growing at an average annual rate of 3.4 percent during the study period. Figure 1 shows Houston MSA employment from 1990 to the present.

Figure 1:
Houston MSA Employment
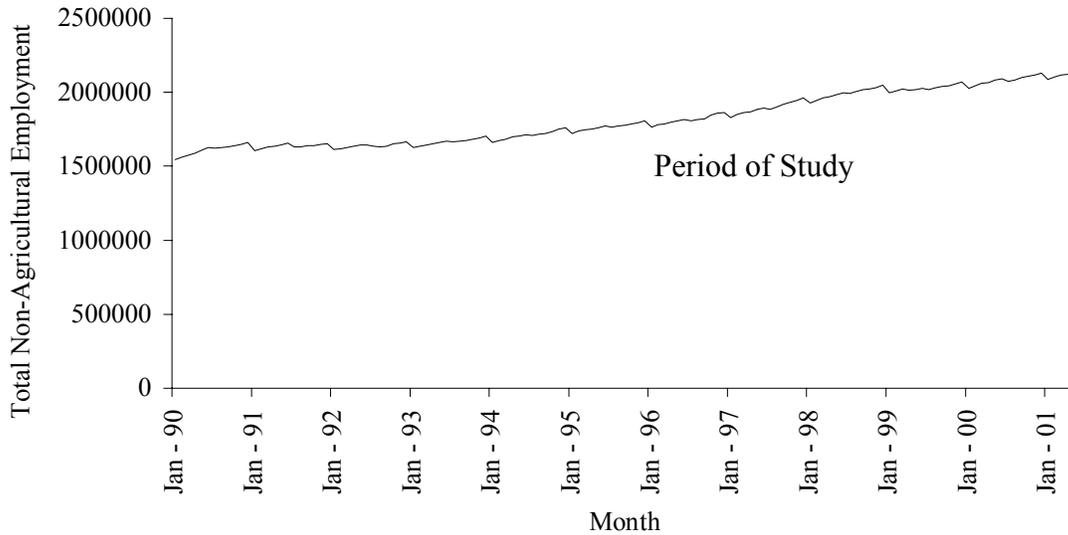
Source: Bureau of Labor Statistics

Welfare Reform in Texas and Harris County[1]

Beginning in the early 1990s, many states began to experiment with various types of welfare reform. In 1995, the Texas legislature passed its major welfare reform legislation, Texas House Bill 1863 (HB 1863), which established time limits, modified eligibility requirements, and enacted a Personal Responsibility Agreement (PRA) for recipients of Aid to Families with Dependent Children (AFDC). As required by federal law at that time, Texas applied for and received a waiver from existing federal AFDC regulations in order to implement HB 1863. This waiver, known as Achieving Change for Texans (ACT), remains in effect through March 2002. HB1863 also consolidated 21 job training, employment and related support programs (including child care) under a newly created agency, the Texas Workforce Commission (TWC), and authorized the creation of 28 local workforce development boards (LWDBs), which would receive block grants from the state to locally administer most of these programs.

---

[1] Much of the discussion of TANF policy changes in the post-welfare reform era was taken from Schexnayder and Lein, et al (2002).

In 1996, Congress passed the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA), which replaced the AFDC program with a new cash assistance program for needy families, Temporary Assistance for Needy Families (TANF). Because Texas already had federal approval to implement ACT before PRWORA went in effect, some federal welfare provisions will not apply to Texas until the state's waiver expires in March 2002. PRWORA also consolidated several categorical child care programs into a new child care block grant called the Child Care Development Fund (CCDF) and gave states more latitude in determining which populations should receive priority for service.

HB 1863 and PRWORA, along with additional changes occurring after the passage of those two major pieces of legislation, greatly affected the policies and operation of Texas' welfare cash assistance program, its job training programs for welfare recipients, and its subsidized child care system. Changes in each of these systems that are relevant to this study are discussed below.

AFDC/TANF

Some provisions in HB 1863 required a waiver from the AFDC welfare regulations that were in effect when the Texas legislation was passed in 1995. These provisions of the law—including time limits, modified eligibility requirements, and a personal responsibility agreement (PRA) for recipients of Aid to Families with Dependent Children—began to take effect in Texas in June 1996, with implementation staggered throughout the regions of the state. The PRA, which includes work and job training, immunization, education, and child support cooperation requirements, among others, took effect in Harris County in June 1996. In January 1997, TANF caretakers in Harris County became subject to Texas' TANF time limits. The state time limit allows 1, 2, or 3 additional years of TANF receipt (according to the TANF caretaker's prior education and work experience) after an adult is offered a slot in Choices, the state's job training program for welfare recipients. Persons exempt from registration for workforce service, including those who are caring for a young child, are not required to participate in Choices and are not affected by the state's time limit unless they volunteer for job training services. Table 3 outlines the operation of Texas time limits in greater detail and

Table 4 summarizes the changes in the 'caring for young child' exemption that occurred during the study period and beyond.

Table 3:
Texas State TANF Time Limits Under ACT Waiver

Groups to Whom Time Limits Apply
- TANF caretakers required to participate in workforce program;
- TANF caretakers exempt from workforce participation who volunteer for those services

Reasons for exemption from TANF workforce participation requirements
- Caring for a young child (see below)
- Temporary or permanent disability of caretaker or family member
- Geographical remoteness
- Clients less than 16 or older than 60 years old
- Full-time students ages 16-18
- VISTA volunteer

Length of TANF receipt prior to reaching Texas time limits
- Tier 1 (caretakers with high school degree or 18 months of recent work history): 12 months of cash assistance after offer of Choices services
- Tier 2 (caretakers with years of high school or 6-18 months of recent work history) : 24 months of cash assistance after offer of Choices services
- Tier 3 (caretakers with less than 3 years of high school and less than 6 months of recent work history): 36 months of cash assistance, with clock beginning 12 months after offer of Choices services for persons meeting Choices requirements

Family members affected by Texas time limits
- Caretakers only; children continue to receive TANF benefits

Table 4:
Comparison of Texas ACT Waiver and Federal Provisions
for Exemption of Caretaker from Labor Force Development Activities
Due to Caring for Young Child

Time Period	Texas Age-of-Child Exemption	Federal Age of Child Exemption
Pre-September 1996	3	3
September 1996	3	1
October 1996 through August 1997	5	1
September 1997 through December 1999	4	1
January 2000 through August 2000	3	1
September 2000 to August 2001	2	1
September 2001 and thereafter	1	1

Because of Texas' welfare waiver, some provisions of PRWORA will not take effect until the end of March 2002. In particular, the definition and number of populations exempt from time limits – including caretakers exempt because they are caring for young children – are governed by Texas law rather than Federal law during this period. See Table 5 for differences between the Texas welfare waiver and PRWORA. In the fall of 1999, the state decided to implement PRWORA's Federal time limits in addition to the state's time limits. However, because those limits allow five years on TANF, no Texas welfare families will reach these time limits prior to the expiration of the Texas welfare waiver.

Table 5:
Comparison of Provisions of Achieving Change
for Texans (ACT) Waiver and PRWORA

Provision	ACT Waiver	PRWORA
Time Limits	Time limits from one to four years depend on attributes of casehead (see Table 3); time limit clock does not start until casehead is offered Choices services. Note: PRWORA time limits also implemented in October 1999.	Five year time limit for all; time limit clock ticks immediately.
Age of child exemption	Age ratchets downward from five to one years (see Table 4)	One year
Responsibilities, Employment and Resources	Casehead must sign responsibility agreement providing for children's immunizations and school attendance, etc.	No corresponding provisions
TANF One-Time	Emergency assistance for non-TANF families in crisis. Provides one-time payment up to $1,000, but family is frozen out of regular TANF for one year	No corresponding provisions

Since the enactment of PRWORA, welfare reform in Texas has continued to evolve. One of the key initiatives enacted in the state included the Work First program, jointly implemented by the Texas Workforce Commission (TWC) and the Texas Department of Human Services (TDHS) in December 1997. The message of Work First is that welfare recipients should access the benefits and opportunities derived from employment. The Work First model includes both job readiness activities and immediate directed job search, including job referrals and job development services. Work First includes a workforce orientation session that TANF applicants must attend as a condition of TANF eligibility prior to approval of their TANF application (unless they qualify for an exception).

Job Training Programs

As required by HB 1863, the operation of the job training program serving welfare recipients (JOBS) was transferred to TWC from TDHS in June 1996 and subsequently renamed Choices. As local workforce boards were certified and developed

a mechanism for managing these programs, the operation of these programs was devolved to the local level. The Gulf Coast Workforce Board (GCWB), which includes Harris County, was certified in January 1997, and began managing contracts for the operations of the Choices program in May 1998.

Child Care Management in Texas and Harris County

Prior to the passage of HB 1863, subsidized child care in Texas was administered by TDHS through contracts with a statewide network of local child care brokers in the Child Care Management Services (CCMS) system.[2] Local CCMS offices allocated vouchers for subsidized child care to eligible families. As mandated by HB 1863, responsibility for the management of subsidized child care services in Texas shifted from TDHS to TWC in September 1996. TWC continued to use the existing CCMS network prior to devolving responsibility for management of subsidized child care to the new local workforce boards.

Devolution of Child Care Management

As local workforce boards were formed (beginning in 1997) and negotiated contracts with TWC for the operation of local workforce programs, they began to assume responsibility for the management of existing CCMS contracts. Until a board became fully operational, TWC assumed management and responsibility of workforce and support services for that region. In October 1998, GCWB began managing the CCMS contract that included Harris County under a uniform set of state policies that had been developed by TWC. Although outside of the time period included in this study, Texas' devolution of the management of subsidized child care services to the local level has continued to evolve. Effective September 1, 1999, local workforce boards assumed full responsibility for the development of most policies governing subsidized child care in their regions.[3]

---

[2] Local child care contractors can be either public or private entities. Most CCMS providers, including the one in Harris County, are private, non-profit organizations.
[3] Ray Marshall Center researchers have funding from the USHHS Child Care Bureau to study the devolution of Texas subsidized child care policies to local workforce boards.

Child Care Policies in Effect During This Study [4]

The passage of PRWORA coincided with the transfer of subsidized child care responsibility to TWC and the local workforce boards. PRWORA eliminated all federal child care entitlements and placed a cap on federal child care funding. It also allowed states to expand the eligibility criteria for federal child care assistance to include families who earn up to 85 percent of the state median income. Although PRWORA no longer requires states to guarantee child care services for current and former welfare recipients, HB 1863 mandates priority for TANF recipients in the Choices program and former TANF recipients who are employed or reach their time limits. Local boards may designate additional groups who receive service priority once the child care needs of these TANF-related populations are met.

Eligibility. During the study period, Texas families were eligible for subsidized child care if their family income at initial eligibility was less than 75 percent of the state median income or 150 percent of the federal poverty income level ($27,484 for a family of three in 1997), whichever is lower. Families could continue to receive subsidized child care until their income exceeded 185 percent of the federal poverty income level ($33,896 for a family of three in 1997**).**

Texas did not make a commitment to serving all eligible families during this period. Local CCMS contractors placed families on waiting lists if sufficient funds were not available to provide subsidized care. Because of concern regarding whether the state would have enough funding to provide child care to persons who would be leaving welfare as a result of HB 1863 provisions, the Texas legislature temporarily increased the number of welfare families who were exempt from job training and time limits requirements. Thus, in September 1995, caretakers with children under five years of age were not required to participate in Choices, which guaranteed a commitment that the state

---

[4] Much of the discussion of Texas child care policy was taken from Meyers, et al. (2000).

would provide child care funding.[5] This exemption age was subsequently lowered to four in September 1997 and remained there throughout the period of this study.[6]

Funding allocation. In order to assure that enough funds were available to TANF recipients, Texas restricted certain sources of child care funding for use by this population alone. Late in 1998, the state began to accumulate balances in the funding sources reserved for TANF-related child care, even though long waiting lists existed for non-TANF families eligible for care. In response to this situation, TWC enacted a rule in December 1998 that allowed some of these funds to be used for non-TANF child care. This reallocation of funds created a one-time increase in non-TANF entrants into the subsidized child care caseload in early 1999.

Payment. Maximum rates to providers during the study period ranged from 50 to 75 percent of the average cost of care identified by local market rate surveys. Although market rate surveys were conducted every two years, the state's reimbursement rates for subsidized child care did not have to conform to the results of the market rate studies. Payments to providers were based on the lower of the provider's published rate or the maximum rate established by the state for each local area.

Co-payments. Families receiving subsidized child care for one child were required to pay 9 percent of their gross monthly income as a co-payment for the cost of care (11 percent for two or more children). Co-payments were not required for families receiving TANF or SSI or those participating in the Food Stamp Employment and Training program. Children enrolled in child care for child protective services reasons also were exempt from the co-payment requirement.[7]

---

[5] Under prior legislation, caretakers with children under the age of three were exempt from job training requirements.

[6] Under PRWORA, only families with children under one year of age are exempt from TANF job training requirements. To prepare the state for the expiration of its waiver in March 2002, the 1999 legislature continued to lower the age of child exemption for TANF recipients. Although outside of this project's study period, this has caused major changes in the types of families receiving subsidized child care in Texas.

[7] These recipients of subsidized child care for child protective services reasons, constituting less than 1% of the caseload, were omitted from the present study.

Summary of Harris County Policy Changes over Time

Table 6 summarizes major policy changes impacting the subsidized child care system in Harris County over the study period.

Table 6:
Welfare, Work, and Child Care Policy Timeline, Harris County, Texas

Date	Event
September 1995	(1) Texas HB1863, passed by Texas legislature in May 1995, takes effect.
	(2) Age of youngest child exemption increased from three to five.
March 1996	"Achieving Change for Texans" (ACT)Waiver approved by Federal Government
June 1996	(1) Cognizance of 'JOBS' job training program transferred to Texas Workforce Commission (TWC) from Texas Department of Human Services (TDHS); program is later renamed 'Choices'.
	(2) ACT Waiver Personal Responsibility Agreement requirements become effective in Harris County
September 1996	Child Care oversight changed from DHS to TWC.
October 1996	Federal PRWORA becomes effective--AFDC becomes TANF and other changes too. (See Table 5.)
January 1997	(1) Gulf Coast Workforce Development Board is certified.
	(2) TANF caretakers in Harris County become subject ACT Waiver time limits. (See Table 3)
September 1997	Age of youngest child exemption reduced from five to four.
December 1997	Implementation of 'Work First' diversion program by Texas Workforce Commission
May 1998	Texas Workforce Commission contracts with Gulf Coast Local Workforce Development Board to operate workforce development programs in Gulf Coast Workforce Development Area.
June 1998	Gulf Coast Local Workforce Development Board begins oversight of existing TWC Child Care Management System contract in Harris County
October 1998	(1) GCWB assumes full oversight of all CCMS services in Gulf Coast Area.
	(2) GCWB issues new contract to local CCMS broker.
February 1999	Excess child care subsidy funds that were earmarked for TANF recipients are made available to non-TANF working poor families.

II. Method

Data Sources

Summary

Like the studies cited above, data for the present study were derived primarily from individual-level administrative records, with supplementary aggregate data from various published data sources. The dependent variables, employment and earnings, were calculated from Unemployment Insurance (UI) records. Explanatory variables included policy variables related to welfare reform and child care subsidy and availability, child care administrative variables, human capital and socio-demographic variables, costs of working, local labor market conditions, and community characteristics.

Table 7 lists the variables used in the analysis and gives the source for each.

Computational Details

A number of variables deserve special mention because either their method of computation is complicated or they differ from those used in other research.

Subsidy Funding Per Poor Child

The variable representing funding per poor child is a ratio intended to measure the commitment on the part of the government to providing subsidized child care. The numerator is based on actual subsidized child care expenditures in Harris County for state fiscal years 1995 through 1999. The denominator is an annual estimate of the number of poor children aged 13 and under whose families would be eligible to begin receiving subsidized child care. Additional computational details for this measure are in the Appendix. Table 8 shows detailed values of this measure and its components over the study period.

Table 7:
Variables Constructed from Available Data Sources

Theoretical Construct	Empirical Measure	Source in Harris County
Dependent Variables		
Earnings	Monthly earnings on all jobs for those who had jobs. (Individuals without earnings were excluded from earnings equation.)	Texas Workforce Commission—Quarterly Unemployment Insurance (UI) wage records. Quarterly data was allocated equally to each month in quarter.
Employment	Binary =1 if the individual has earnings during month.	Texas Workforce Commission—Quarterly UI wage records
Explanatory Variables		
1. Policy Variables		
Fund Availability	Subsidized child care funding per poor child in Harris County	**Numerator:** Special tabulation supplied by TWC. **Denominator:** Estimates the number of poor children based on the number receiving free or reduced lunch at public schools. See text below.
Welfare Reform/Minimum Wage Increase (10/1/96)	Binary =1 after client's first re-determination following date of implementation of welfare reform and the federal minimum wage increase.	Federal law, TDHS Administrative Records
Second Minimum Wage Increase (9/1/97)	Binary =1 after the September 1, 1997 federal minimum wage increase.	Federal law
Gulf Coast Workforce Development Board assumes responsibility for TANF-related Workforce Programs in Gulf Coast Region	Binary =1 after April 1998.	Personal communication with Director of GCWDB.
Earned Income Tax Credit (EITC)	Income at which phase-out of EITC begins.	IRS publications 596 for 1996 through 1999.
Implementation of ACT Waiver	Binary =1 after June 1996	TDHS Policy Memoranda
Pre-Waiver Sanction Regime	Binary =1 if before May 1997, when sanctions were replaced with penalties under ACT waiver.	TDHS Policy Memoranda
Region 6 PRA Penalty Rate	Number of penalties assigned in Region 6 for violation of PRA provisions divided by Region 6 caseload.	Texas Department of Human Services *Management Focus Reports*
ACT Wavier Time Limits Imposed in Harris County	Binary =1 after December 1996.	TDHS Policy Memoranda
Welfare and Workforce Agencies Implement Diversion Programs	Binary =1 after November 1996.	TDHS and TWC Policy Memoranda
Child Care Subsidy Variables		

Theoretical Construct	Empirical Measure	Source in Harris County
State/Federal Child Care Subsidies	Binary =1 after January 1999, when TANF funds were freed-up for Non-TANF income eligible.	TWC Directives
Parental Co-payments	Binary =1 if the presence of more than one child in family causes family to pay at higher co-pay rate.	CCMS case records
Level of State Payment to Providers for Subsidized Care	State-set daily full-time reimbursement rate for center care of children the age of the youngest child in care in the family.	TWC State Biennial Child Care Plans
Availability of Child Care		
Youngest child age-eligible for Head Start	Binary =1 if youngest child is at least 3 years old and less than 5 years old on 9/1 and zero for other ages and summer months	Child Care Subsidy Files
Youngest child age-eligible for public school	Binary =1 if child is at least 5 years old on 9/1 and zero for other ages and June and July (months with no public-school summer school)	Child Care Subsidy Files maintained by CCMS
Child care Availability	**Numerator:** Number of licensed child care slots available in ZIP Code, All age groups. (Includes centers and registered family homes); **Denominator:** Number of poor children in ZIP code.	Texas Department of Protective and Regulatory Services (the agency responsible for licensing and regulating child care facilities in Texas), 1990 Census of population
Head Start Availability	Number of Head Start slots per poor child ages 3-5 in zip code	Gulf Coast Community Services Association administrative records
Pre-Kindergarten Availability	Number of public school pre-k slots per poor child in zip code	Texas Education Agency
2. Child Care Administrative Variables		
Change of Administration	Binary=1 after August 1996, indicating statewide takeover of Child Care Subsidy Administration by TWC from TDHS	HB 1863; Executive Orders Governing Implementation of HB 1863
Change of Administration	Binary =1 if date is after October 1998, when GCWDB assumes full oversight of CCMS in Gulf Coast Area	Personal Correspondence with GCWDB Executive Director
3 Human Capital/Socio-Demographic Variables		
Age	Age of the subsidy recipient and the squared value of age	Child Care Subsidy Files and TANF files
Education	**Two variables:** (1) Subsidy recipient's years of education, (set to zero if missing, top-coded at 12) and (2) Binary =1 for missing education	TANF files
Female Case Head	Binary =1 if subsidy recipient is female	Child Care Subsidy Files and TANF files
Current Marital Status	Binary =1 if subsidy recipient is currently married	Child Care Subsidy Files
Previous Marital Status	Binary =1 if subsidy recipient is separated, divorced, or widowed	Child Care Subsidy Files

Theoretical Construct	Empirical Measure	Source in Harris County
Race and Ethnicity	Three Binaries for minority groups: (1) Non-Hispanic Black, (2) Hispanic, (3) Other non-Hispanic minority. (Omitted group is non-Hispanic White.)	Child Care Subsidy Files and TANF files
Number of Children	Total number of children under age 18 residing in family	Child Care Subsidy Files and TANF files
Age of youngest child	Age of youngest child in months	Child Care Subsidy Files and TANF files
Readiness for employment	Binary =1 if client has a high school education and recent work experience (Subject to Tier 1 time limit); Binary =1 if client has no high school education and no work experience (Subject to Tier 3 time limit); (Omitted group: Tier 2 time limit.)	TANF case records
Availability of Informal Care	Binary =1 if client has individual older than age 13 in household. Binary =1 if care type is 'informal.'	TANF case records, CCMS case records
4. Costs of Working		
Cost of Space	Median rent per room of houses in ZIP code	US Census of Housing 1990
Transportation Costs	Travel time to work	US Census of Housing 1990
5. Local Labor Market Conditions		
Availability of Low Skill Jobs	Monthly employment change rates in: (1) Non-Durable Manufacturing, (2) Retail and Wholesale Trade, (3) Personal Business and Health services, and (4) Government.	Bureau of Labor Statistics
6. Community Characteristics		
Household Income	Estimated Median Household income in client's ZIP code, 1989	US Census of Population 1990
Race/Ethnic Composition of Community	Estimated proportion of non-Hispanic Blacks, non-Hispanic other, and Hispanics in ZIP code	US Census of Population 1990
Availability of Public Transportation	Binary =1 if more than 1 percent of the workers in the zip code utilize public transportation	US Census of Population 1990
Poverty of Children	Percent of the children in the ZIP code who were below poverty	US Census of Population 1990

Table 8:
Detail of Computation of Subsidy per Poor Child in Harris County

Estimated Number of Poor Children			SCC Funding		
School Year	Students Receiving Free or Reduced Cost School Lunch in Harris County	Estimated Number of SCC Eligible Children	State Fiscal Year	Funding Expended on SCC in Harris County	Estimated Funds per Poor Child
94-95	246,456	191,743	95	$30,695,985	$160.09
95-96	276,407	215,045	96	$30,372,312	$141.24
96-97	283,374	220,465	97	$33,787,316	$153.25
97-98	308,660	240,137	98	$41,354,292	$172.21
98-99	317,265	246,832	99	$49,184,206	$199.26

Sources: Free and reduced lunch children, Texas Education Agency; ratio of SCC-eligible children to free lunch children, National Survey of America's Families; SCC funding, TWC. Note that school years and state fiscal years do not coincide exactly. School years last from mid-August to mid May. Texas fiscal years run from September 1 to August 31.

Funding Per Subsidized Child

While the computation of subsidy amount per poor child is interesting, of more relevance to predicting employment behavior is the ratio of subsidy funds to the number of children who actually received any subsidy. This tabulation is shown in Table 9. While the subsidy per poor child shown in Table 8 can be interpreted as a measure of the government's commitment to helping all children, the data in Table 9 may be interpreted as a measure of the benefit actually received by the subsidized families. The number of poor children shown in Table 8 is much larger than the actual caseload of children receiving subsidy, which is tabulated in Table 9. As shown in Table 9, only seven to eight percent of the eligible children actually receive any subsidy in any given year.

Table 9:
Subsidy Funds Expended per Child

Study Period	Child-Months of Subsidy Provided	Unduplicated Case Count of Children Receiving SCC	Unduplicated Case Count as a Percent of Poor Children	Estimated funding during study period	Funds per Child Month of Subsidy Provided	Funds per Child receiving subsidy in study period
95-96	102,231	17025	8.1%	$30,453,230	$297.89	$1,788.74
96-97	102,756	15023	6.9%	$32,933,565	$320.50	$2,192.21
97-98	121,057	17428	7.4%	$39,462,548	$325.98	$2,264.32
98-99	140,491	19716	8.0%	$47,226,728	$336.15	$2,395.35

Source: Child-months and unduplicated case count, CCMS administrative records; funding, special tabulation from TWC. The study period '95-96' is July 1995 to June 1996, and so forth for the other study periods. Funding for the study periods is estimated by allocating the state fiscal year totals.

Maximum Reimbursement Rates

In Texas, about half of the state is subjected to a child care market study each year. Any given part of the state will usually be covered by a study every two years, though not always. The results of these market studies are submitted to TWC to aid them in setting the maximum reimbursement rates for each area of the state. TWC is not required to set the rates at the levels suggested by the market rate studies – the studies are only one of the many sources of information TWC uses in deciding the rates. Table 10 shows the maximum reimbursement rates established by TWC for the Harris County area over the study period.

Table 10:
Maximum Reimbursement Rates for State Subsidized Child Care

Age Group	State Fiscal Years	
	1995-96	1997-99
Infants (0-17 Months)	$18.00	$20.09
Toddlers (18-35 Months)	15.35	17.13
Pre-School (36-71 months)	15.45	17.24
School Age (6-12 Years)	16.35	18.25

Source: TWC Tabulation. Data in table are maximum daily rates for full-day care in licensed centers.

All remaining variables are either close parallels to those defined in the prior studies, or they are adequately described in Table 7. Table A-1 in the Appendix shows descriptive statistics for all variables used in the models.

Description of the Model

The population to which the model is applied consists of all current and former welfare recipients who also received subsidized child care in Harris County during the period July 1995 to June 1999. These dates were chosen so that the time coverage would include both pre- and post-reform observations. The definition of 'reform' includes provisions included in Texas HB 1863, PRWORA, and later welfare reform initiatives adopted by the state, as discussed above.

As in QWG, the dependent variables are employment and earnings.[8] Employment is modeled as a categorical variable that takes a value of one if the individual had any earnings and zero otherwise. Earnings are modeled as the logarithm of UI-covered wages reported to the state Unemployment Insurance system. Both of these dependent variables are modeled with separate equations as functions of various exogenous variables. The categorical variable employment is modeled using a logistic approach. The logarithm of income is modeled as a linear function of independent variables, with only those observations having positive earnings included in the income equation.

Due to the repetitive nature of family-level longitudinal data, in addition to the use of ordinary least squares and logistic regression, both equations are also fitted using fixed effect and random effect estimation procedures.[9] The fixed and random effects are applied at the household level to control for unobserved family-specific effects. For a more detailed discussion of these procedures and their advantages and disadvantages, please see Appendix section 'Details of Model Specification

Fixed and Random Effect Estimation'.

---

[8] In LWQW, however, the dependent variables were employment and *hours*.
[9] Green (1997), Chapters 14 and 19.

Tests of Model Specification

Two tests of the appropriateness of the fixed and random effect model specifications were performed (for complete details see Appendix section, 'Detailed Tests of Model Specification'). The results of first of the tests, a Breusch and Pagan Lagrange multiplier test found a significant family effect, indicating that either a fixed or random family effects model was to be preferred. The second test, a Hausman test for correlation between the included right hand side variables and a random family effect, suggested that coefficients estimated with the random effect model may be biased, and thus a fixed-effect model would be more appropriate. In the discussion that follows, the interpretations will concentrate on the coefficients of the fixed effect estimation, which are listed below in Table 11. For the sake of completeness, Table A-2 in the Appendix displays coefficients for all three procedures – ordinary, fixed-effects, and random-effects models.

III. Results and Discussion

The results of fitting the fixed effects model are shown in Table 11. The coefficients reported for the logistic specification are direct measures of the influence of the independent variable on the probability of employment.[10]

---

[10] The coefficients in the table are the derivatives $\dfrac{\partial L(x_i^{'}\beta)}{\partial x_{ik}}$ described in Maddala, 1983, p. 23. The interpretation of the Maddala coefficients is much more straightforward than that of the β coefficients of the logistic function, in that they show the influence of the independent variable directly on the probability of employment (rather than on the logarithm of the odds ratio).

Table 11:
Results of Fixed-Effects Models

	Employment	Earnings
	Coefficient	Coefficient
Policy and Administrative Variables of CCMS System		
Subsidized Child Care Funding per Poor Child in Harris County	.00175*	-.00007
TANF CCMS Funds Reallocated to Non-TANF Income Eligibles	-.00018*	.00035**
Parental Co-Payment Rate	.043**	.06**
State Reimbursement Rate	-.00908**	-.028**
Statewide Takeover of Child Care Subsidy Administration By TWC from TDHS	-.032	-.13**
Gulf Coast LWDB Assumes Full Oversight of CCMS in Gulf Coast Area	.031*	
Other Policy and Administrative Variables		
Binary for PWRORA and First Minimum Wage increase (10/1/96)	.083**	.245**
Second minimum wage increase (9/1/97)	-.041*	.031
Gulf Coast LWDB Assumes Responsibility for Workforce Programs in Gulf Coast Region		.047**
Earned income Credit		.093**
Implementation of ACT Waiver	.077**	.161**
Pre-Waiver Sanction Regime	.433**	1.563**
Region 6 PRA Penalty Rate		.12**
ACT Wavier Time Limits Imposed in Harris County	.056**	.051**
Welfare And Workforce Agencies Implement Diversion Programs		-.065**
Availability of Child Care and Early Childhood Education		
Youngest Child Age-Eligible for Head Start		.021*
Youngest Child Age-Eligible for Public School	.037**	
Child Care Capacity in ZIP Code		-.011
Head Start Availability		
Pre-K Availability		-.013
Human Capital and Socio-demographic Characteristics		
Age	.015**	.025**
The Square of Age	-.019**	-.03**
Currently Married	-.093	-.205*
Number of Children	.054**	.045**
Age of Youngest Child	.00137**	-.00073
Client Is in Tier 1 (Most Employable)	.045**	.143**
Client Is in Tier 3 (Least Employable)	-.015	.032
Client Is Using informal Care		-.096**
Household Includes Person Over 13	.185	
Costs of Working		
Median Rent per Room of Houses in Zip Code		.069**
Travel Time to Work		-.00752*
Local Labor Market Conditions		
Employment Growth Rate--Nondurable Manufacturing	1.751**	7.99**
Employment Growth Rate--Trade		
Employment Growth Rate--Services	-.296	-3.895**
Employment Growth Rate--Government		
Community Characteristics		
Median Household Income in ZIP Code	-.00653**	
Percent Black in Zip Code	-.038	.041
Percent Hispanic in Zip Code	-.185**	.081
Percent Other Minority in Zip Code	-.015	.221

	Employment Coefficient	Earnings Coefficient
Binary=1 If More Than 1 Percent of Workers in Zip Code Utilize Public Transportation	.042	.105**
Percent of Children in Zip Code Who Were Below Poverty	-.101	
Constant Term		4.48**
Test for Overall Significance of Model	228 =3200.24 Prob > 2 = .0000	F(33,74315) = 188.71 Prob > F = .0000

NOTE: * = p < .05;
             ** = p < .01

Child Care Policy and Administrative Variables

Almost all of the child care policy and administrative variables were statistically significant. One interesting exception to this is child care funding per child, which has explanatory power in the employment equation but not the earnings equation. This outcome suggests that increasing funding for subsidies is associated with increased employment among recipients, but is not predictive of higher earnings among employed recipients. The magnitude of the child care funding coefficient is 0.00175, indicating that if the funding per poor child were to be raised by one dollar, the probability of employment would increase by about two tenths of one percent. Multiplying the range of this variable ($58, see Appendix Table A-1) times its coefficient gives the product 0.10, which may be interpreted as the total influence of the level of child care subsidy over time. Thus, if the low 1995-96 level of funding per poor child were to be imposed in 1998-99, the expected level of employment among recipients would drop by about 10 percent.

The variable representing the reallocation of TANF child care funds to those eligible for reasons of income in February 1999 was statistically significant in both the employment and earnings equations. This one-time reallocation of funds is associated with a small decline in the probability of employment among recipients, and a small increase in earnings. This finding is counter-intuitive, as the share of families using subsidized child care for employment purposes should have increased as a result of this change.

23

The child care policy variable showing the strongest association with employment is parental co-payment rate, although its interpretation is rather ambiguous. The rationale behind this variable is based on the fact that families with only one child receiving subsidized child care pay a co-payment of 9 percent of their income, while those with more than one child receiving care pay 11 percent. The results indicate that increasing the co-pay from 9 to 11 percent predicts a 4.3 percent increase in the probability of employment. This interpretation is a little tenuous, however, since the measured co-pay effect is actually confounded with (indistinguishable from) the effect of having more than one child. Although a linear function of number of children is controlled for in the equation, to the extent that the *true* number-of-children effect is non-linear[11], then it will not be distinguishable from the identified co-pay effect.[12]

The level of the state reimbursement rate is also significantly related to both employment and earnings. The effect is such that an increase in the reimbursement rate will induce both a decrease in the probability of employment and a decrease in the amount earned. As shown in Table 10, the reimbursement rates rose about $2 during the study period. This magnitude of increase in the rates would predict a reduction in probability of employment of about 1.8 percent and a reduction of about 5.6 percent in the earnings of the employed.

The final effect to be discussed among the child care policy variables is the effect of the devolution variables. In the first stage of devolution, the transfer of responsibility of child care subsidy administration from the welfare department (TDHS) to the labor department (TWC) was associated with a reduction in the probability of employment and expected earnings starting in August 1996. In this early stage of the devolution process, the transfer of responsibilities was not smooth, and the problems of the transition may

---

[11] The number of children effect could be non-linear if, for example, the effect of having a second child on the likelihood of being employed is greater than the effect of having a third or fourth child, etc.

[12] One seeming solution to this difficulty would be to use the actual co-pay as a variable. However, since co-pay is a function of income, this would introduce an endogenous variable to the right hand side where only exogenous variables belong. This is also the reason that the co-pay variable is not interacted with a dummy indicating whether the household is subject to co-pay. Since TANF households are exempt from co-pay, the endogenous variable TANF status would wrongly appear on the right hand side.

have negatively influenced services delivery.[13] This initial reduction in employment probability and expected earnings was partly offset in April 1998, when the Gulf Coast local workforce board took over administration of workforce development in Harris County. For the Gulf Coast area, this event may have signaled the end of the period of relative chaos that began in 1996, as the employment rate of recipients increased, but not their level of earnings.

These devolution effects must be interpreted carefully in light of the effects being modeled by the other binary variables that were switching on and off during the period. In particular, implementation of the ACT waiver, which occurred before the devolutions described in the previous paragraphs, is significant and positive in all specifications for both the employment and earnings equations. Taken together, the prevalence of findings of statistical and practical significance for most of the policy variables show that policy does affect outcomes, and that overall the outcomes of the waiver and the devolution it induced were positive. The uneven total effect of these variables over time suggests that changes in policy can produce temporary periods of administrative turmoil that can affect employment and earnings outcomes.

Other Policy and Administrative Variables

Among the group of other policy variables are two indicators intended to model the effects of sanctions and penalties on earnings and employment. As described above, in Texas the entire sanction process was replaced with a penalty process in May of 1997. Under the old sanction process, caseheads could be removed from the case and the benefit check reduced if the casehead failed to participate in workforce activities when expected, or failed to cooperate with child support enforcement. Under the ACT waiver provisions, a casehead being penalized would remain on the case but would be penalized with a monetary fine. The kinds of infractions that would result in a penalty included a much broader scope than the infractions that would have resulted in a sanction. A penalty could be issued for any of the old reasons for sanction, plus the casehead could

---

[13] In the interest of conciseness, a complete discussion of the difficulties associated with this transition is

be penalized for failure to follow the provisions of the personal responsibility agreement. For example, under the new regime, the casehead could be penalized for quitting a job without good cause, failing to send the children on the case to school, or failing to obtain immunizations for them.

Due to the fact that the pre-ACT waiver sanction data are not at all comparable to the post-ACT waiver data, it was not feasible to model the pre- and post-waiver regimes with a single variable representing punishments. Further, the pre-ACT waiver sanction data are not readily available because of the administrative procedures used to record sanctions in those years. Accordingly, punishments were modeled using two variables: a dummy variable to represent the period of time when sanctions were being imposed, and a continuous variable – the aggregate penalty rate – for the post-ACT waiver penalty era. The expectation was that in the penalty era, the extra penalties would cause people to behave more responsibly, and that this would induce an increase in employment. The dummy for the pre-penalty period was intended to be nothing more than a nuisance parameter that had to be included in the model to prevent bias to the penalty rate coefficient, and thus its coefficient should not be interpreted.

Interestingly, and seemingly contrary to predictions, the estimated effect for the new regime penalty rate is large and positive in the earnings equation, but was dropped from the employment equation due to non-significance. It is not immediately clear why being penalized would be associated with *increased* earnings. It is possible, however, that as the subsidized caseheads earn more money they start to become ineligible for TANF. The higher earning casehead realizes that if she goes to the welfare office for her next re-certification, she will be dropped from the TANF caseload. Thus, she skips the re-certification appointment and is penalized.[14] This situation, if it occurs often enough, would cause a spurious positive correlation between higher earnings and penalties.

The time period during which the first minimum wage increase occurred and PWRORA took effect were associated a strong positive relationship with employment

---

not feasible.
[14] More discussion of this scenario can be found in Schexnayder and Lein, et al (2002).

across all specifications of the model.[15] Around this same time, quite a bit of publicity also occurred about all aspects of both Texas and Federal welfare reform. Unfortunately, since these events are contemporaneous, there is no scope for separating their independent effects. There is some indication from the coefficients for the second minimum wage increase, however, that minimum wage increases exert little influence on employment or earnings. The effects of the second minimum wage increase are not significant for earnings and small and negative for employment, roughly as would be predicted by microeconomic theory.[16] Taken together, the two minimum wage increase dummy variables suggest that either actual changes incorporated as a result of welfare reform or publicity surrounding those changes probably were associated with substantial positive effects on both employment and earnings, and the minimum wage increases had small effects that were in accord with microeconomic theory.

The implementation of ACT waiver provisions appears to have had significant and positive associations with both employment and earnings. The binary variable for the imposition of ACT waiver is positive and statistically significant in all model specifications. The individual aspects of ACT waiver were also positive in many cases. In addition, we also observe a significant and positive effect of the imposition of time limits. As was the case for the PWRORA and ACT waiver coefficients, the coefficients of the time limit binary variable were significant and positive in all model specifications.

This finding that welfare reform was associated with greater employment is difficult to reconcile with other research done at this Center.[17] The Center analyzed the provisions of ACT waiver using a random assignment research design, and found few significant effects. The difference between these findings and the present ones may be explained in two ways. First, the population studied and the dependent variables are different. In the ACT waiver evaluation the study was limited to TANF recipients, and

---

[15] All references to 'minimum wage' refer to federal minimum wage laws. Texas has a minimum wage law, but its level was below the federal standard during the entire study period.
[16] Other things being equal, when firms are faced with an increase in the price of minimum-wage labor, less of it will be demanded. Thus, employment will fall, but for those still employed, earnings will rise. Whether aggregate earnings will rise as a result of the minimum wage increase depends on the elasticity of demand for minimum-wage labor, but aggregate employment is irrelevant to the earnings equation in this research because only the employed are included in the earnings equation.
[17] Schexnayder, Olson, and Schroeder (2001).

the tradeoff was employment versus unemployment. In this study, the population is subsidized child care recipients, and the tradeoff is employment versus workforce activities. Second, much of the true effect of ACT waiver may have been due to publicity and/or stigma effects, many would have fallen equally on the experimental and control groups and thus making it hard to detect a statistical difference in their outcomes. However, in the present research, the design is a pre-post approach implemented through the use of dummy variables. In this kind of design, the pre-reform observations are assumed to represent a control group, and the post-reform observations represent an experimental group. Under this approach, there is no scope for the treatment to be inadvertently administered to the control group. The main problem with using the pre-post approach is that the estimated effects may not necessarily be due solely to welfare reform – they may be induced by other contemporaneous events, such as economic growth. The risk of this kind of error in the pre-post analysis is partially reduced by including variables to control for observable effects such as labor market conditions, but effects of other historical events can never be completely ruled out.

The implementation of diversion programs was associated with a negative relationship with earnings, and showed no effect on the probability of employment. A recent report on families diverted from Texas TANF indicated that potential applicants experienced a drop in earnings in the quarter of their diversion, which prompted their coming to the welfare office to apply for benefits.[18] The presence of diversion programs temporarily kept some of those families from entering the TANF rolls.

One might ask why a relationship between diversion programs and earnings was observed even though the diversion programs could only affect those members of the sample who were applying for TANF. While in most cases one would expect TANF applicants to make up only a small proportion of a sample of poor persons, this expectation is not appropriate for Texas. In Texas, as in other low-benefit states, one of the most dominant characteristics of the welfare population is the tendency of caseheads to cycle on and off welfare as their individual circumstances change. Spells of welfare receipt among the cycling population typically last much less than a year. Thus, over the

four-year study period, it would not be unusual at all for a TANF recipient to exit and attempt to re-enter TANF more than once. This repeated contact with the diversion programs is the reason the diversion programs could have an effect, even for people who were already on TANF.

Availability of Child Care and Early Childhood Education

The fixed and random effect specifications suggest that there is little association between availability of Head Start and Pre-K and the probability of employment or earnings – the estimated coefficients for these variables were not significant in both equations. One possible reason for this lack of significance may have been due to so little variation in the data over the period observed. The total number of Head Start slots decreased by about 11 percent over the study period, but the decline was not spread evenly over the facilities. Of the 61 facilities offering Head Start over the study period, only nine changed capacity during the study period. Of these, three shut down, one opened, three grew and two shrank. For most of the zip codes, the number of slots available never changed during the study period.[19] Also, because eligibility for Head Start does not depend on whether or not the parent is employed or enrolled in training, it should not be expected to have an effect in the likelihood of one status being more likely to occur than the other.

In the fixed and random effect specifications, we found small positive associations between public school age-eligibility and employment, and between Head Start age-eligibility and earnings. The other coefficients were not significantly different from zero.

---

[18] See Schexnayder and Lein, et al (2002) for further discussion of this relationship.
[19] While there was little variation in Head Start availability over time, there was substantial difference between the zip codes. This may explain why the estimated coefficients for Head Start availability and Pre-K availability were significant in the ordinary least squares equations.

Human Capital and Socio-demographic Characteristics

The age and square-of-age variables were significant in all specifications. The coefficient of age is positive and the coefficient of the square of age is negative in all specifications, indicating that the probably of being employed increases with increasing age up to a point, then begins to decline with additional increases in age. Using the coefficients from the fixed effect specification, the peak of the age effect on employment occurs at 39.5 years of age. This finding suggests that the very youngest and very oldest caseheads receiving subsidized child care are more likely to be assigned to receive TANF-related workforce activities than those around 40 years old. This finding may be explained by imagining that the youngest and oldest caseheads are likely to benefit from workforce activities because they are viewed as the least employable. Before that age, the casehead experiences an increasing probability of employment, and after that age, further increases in age reduce the probability of employment. The effect of age on earnings peaks much higher, at approximately 83.3 years, suggesting that for all relevant ages, increasing age predicts increasing earnings, but that the rate of increase diminishes with advancing age.

The coefficients of the years-of-education variable are significant and positive in all specifications. This implies that increased education of the casehead reduces the need for workforce development activities.[20] The form of the data did not permit us to update the years-of-education datum for those caseheads who might have received additional education during the period of analysis. Thus, education is a time-invariant variable for everyone, and for this reason it had to be dropped from the fixed effect specification. This time-invariance of education may be desirable since it avoids potential endogeneity.

Being female is associated with increasing likelihood of employment, although this effect could not be tested in the fixed-effects model due to time invariance. The positive and significant employment effect for females is equivalent to a negative and significant effect for males. Anecdotal evidence suggests that this differential exists because male caseheads, who comprise such a small fraction of the cases, often have

some unobserved characteristic, such as a disability or other health problems that reduces their employment prospects.

The number-of-children variable has a positive and statistically significant coefficient in both the employment and earnings equations in both the fixed and random effect specifications, as was the case in QWG.

The positive and significant coefficients for the most-employable variable are in consonance with expectations. This variable is based on the client meeting three conditions: (1) recent work experience, (2) at least a high-school education, and (3) the caseworker must believe the client is job-ready. Someone meeting these conditions should be more likely to be employed and, once employed, should earn more. The coefficients of the least-employable variable were also in consonance with theory, only less strongly so. The coefficients for least-employable were negative as expected in the random effects specification and not significant in the fixed effects specification, perhaps because the variable is updated so infrequently.

Two variables were entered for the purpose of indicating whether the client received informal care through the CCMS system. The first is a binary indicating that the actual child care arrangement being subsidized is classified as 'informal' by the CCMS system.[21] The second is a binary variable that equals one when there is at least one child or adult in the household other than the casehead who is old enough to care for the younger children. Overall, the *availability* of informal care was found to be not significant, but the *use* of informal care is negatively related to earnings.[22] Clients often use informal care if they are working part time or odd hours. For this reason it is hypothesized that the coefficient of the informal care variable is biased downward by a tendency of users of informal care to be employed part time, working fewer hours than the clients using other forms of care, and thus earning less. If the UI wage data were to

---

[20] The variable indicating that the education of the casehead is unknown has been put in the regression to prevent bias in the coefficient of the education variable. It yields a nuisance parameter that can be ignored.
[21] A very small share of CCMS child care is 'informal' care. While informal care constitutes the most common child care arrangement for former TANF recipients, most of this care occurs outside of the subsidy system.
[22] See Schexnayder and Lein, et al. (2002) For amore complete discussion of this issue.

indicate the number of hours worked or the wage rate, it would be possible to test this hypothesis.

Local Labor Market Conditions

The variables for the growth rates for the trade and government industries were dropped from the fixed effects specification for lack of significance. However the other two industries in the regression had significant coefficients. The coefficient for growth in non-durables manufacturing was positive and significant for both employment and earnings, as could be expected. The unexpected result was the negative coefficient for growth in the services industry, which was significantly negative in the earnings equation. This negative coefficient may be an indicator of fewer hours worked and/or lower wages earned by workers in the service industry.

Community Characteristics

The direction of the associations between the community characteristic variables and employment and earnings are often contrary to expectation. For example, median household income is negatively related to employment. The corresponding coefficient in QWG was positive, but in LWQW it was positive in some specifications, negative in others, and often not significant. It is difficult to imagine why those recipients with more affluent neighbors would be less likely to be employed.

Also puzzling are the coefficients of the neighborhood racial composition variables, which were not significant predictors of earnings, and only one, the coefficient for percent Hispanic, was significantly related to employment. This result indicates that living in a predominately Hispanic neighborhood reduces a child care recipient's probability of employment. This effect occurs in addition to the effect of the client's own race. In QWG, the neighborhood racial composition coefficients were positive and significant indicating that living in a minority neighborhood increases the likelihood of employment. However in LWQW the sign and significance level of the coefficients for the neighborhood racial composition variables varied by race and by the different specifications. It is likely that the lack of power of these neighborhood race variables in

explaining employment and earnings is due to their inter-correlation with the variables describing the client's own race.

The public transportation variable is positive but not significant in the employment equation, but positive and significant in the earnings equations under all specifications of the model. This positive coefficient indicates that living in an area in which public transportation is utilized is associated with higher earnings among subsidized child care recipients.

Summary

The present findings indicate that the employment and earnings of recipients of subsidized child care are related to a number of factors including policy, attributes of the client, and features of the environment and economy. Policy changes such as welfare reform, funding levels, and changes in administrative organization were shown to have predictable relationships with employment and earnings. Personal attributes such as number of children, age, and employability were also shown to influence employment outcomes. Finally, industry-specific employment growth in the economy is related to employment and earnings of subsidized child care recipients.

Bibliography

Baltagi, B. H., and Li Qi (1989). "A Lagrange Multiplier Test for the Error Components Model with Incomplete Panels." *Econometric Reviews* 9:103-7

Breusch, T., and A. Pagan (1980). "The Lagrange Multiplier Test and Its Application to Model Specification in Econometrics." *Review of Economics and Statistics* 74:635-42. Green, William H. (1997). *Econometric Analysis*, 3rded., Prentice Hall, New Jersey.

Hausman, J.A. (1978). "Specification Tests in Econometrics," *Econometrica* 46:1251-71.

Leamer, Edward E. (1983). "Model Choice and Specification Analysis," in Zvi Griliches and Michael D. Intriligator (eds), *Handbook of Econometrics Vol. I,* Amsterdam, North Holland, 286- 330.

Lemke, Robert J., Ann Dryden Witte, Magaly Queralt, and Robert Witt (2000). "Child Care and the Welfare to Work Transition," NBER Working Paper 7583, http://www.nber.org/papers/w7583, March.

Liang, K.Y.and S.L.Zeger (1986). "Longitudinal data analysis using generalized linear models," *Biometrika* 73, 13-22.

Maddala, G.S. (1983). *Limited Dependent and Qualitative Variables in Econometrics*, Cambridge University Press.

Meyers, Marcia K., Laura R. Peck, and Elizabeth E. Davis, et al (2000). "Child Care Subsidy Use in Five States," Draft presented for the U.S. Department of Health and Human Services, Administration for Children and Families' Meeting on Evaluating Welfare Reform, June 6-8.

The National Survey of America's Families Database (2001). Assessing the New Federalism Project. http://newfederalism.urban.org/nsaf/index.htm, The Urban Institute.

Queralt, Magaly, Ann Dryden Witte, and Harriet Griesinger (2000). "Changing Policies, Changing Impacts: Employment and Earnings of Child-Care Subsidy Recipients in the Era of Welfare Reform," *Social Service Review* (December 2000), 588-619

Schexnayder, Deanna, and Laura Lein, et al (2002). "Texas Families in Transition/ Surviving Without TANF: An Analysis of Families Diverted From or Leaving TANF," Ray Marshall Center for the Study of Human Resources and Center for Social Work Research, The University of Texas at Austin; and Center for Innovative Projects for Economic Development, Prairie View A&M University.

Schexnayder, Deanna, Jerome A. Olson, and Daniel G. Schroeder (2001). "Achieving Change for Texans Evaluation: Net Impacts through September 1999," Ray Marshall Center for the Study of Human Resources, The University of Texas at Austin.

Theil, Henri (1971). *Principles of Econometrics*, Wiley, 544-545

White, Halbert (1980). "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity," *Econometrica* 48:4, 817-838

Appendix

Computational Details of Variables Included in Model

Subsidy funding per poor child

As described above, the variable representing funding per poor child is a ratio intended to measure the commitment on the part of the government to providing subsidized child care. The numerator is based on a special tabulation provided by TWC of actual child care expenditures in Harris County for state fiscal years 1995 to 1999. The denominator is an estimate of the number of poor children aged 13 and under who would be eligible to begin receiving subsidized child care. In general, children who live in TANF families or working families earning less than 150 percent of poverty are eligible to begin receiving subsidized child care. These are very similar to the rules governing eligibility for free or reduced lunches at school, for which families must earn less than 185 percent of poverty, or be receiving any kind of public assistance such as food stamps, TANF, or Medicaid. Data on the number of children receiving free or reduced lunch in Harris County by year[23] were multiplied by an adjustment factor to get an estimate of the number of children eligible for subsidized child care. The adjustment factor, which took the value 0.778, was determined by making a special tabulation from the National Survey of American Families.[24] In calculating the adjustment factor, the numerator was the number of children in Texas who were under age 14, and who were living in households with incomes of 150 percent of poverty or less, and the denominator was the number of children receiving free or reduced-price school lunches in Texas. Table 8 in the main text shows the trajectories of these variables over the study period.

---

[23] From the Texas Education Agency: http://www.tea.state.tx.us/adhocrpt.
[24] The National Survey of America's Families Database, 2001.

Descriptive Statistics for Variables Included in the Models

Table A-1:
Descriptive Statistics

	Mean	Median	Minimum	Maximum	Standard Deviation
Dependent Variables					
Monthly Earnings for those with earnings	$894	$838	$0.03	$10629	$606
Work/No Work	0.74	1	0	1	0.44
Explanatory Variables					
1. Policy Variables					
Subsidized Child Care Funding per Poor Child in Harris County	$168	$172	$141	$199	$21
Welfare Reform/Federal Minimum Wage Increase (10/1/96)	0.74	1	0	1	0.44
Second minimum wage increase (9/1/97)	0.53	1	0	1	0.5
Gulf Coast Workforce Development Board Assumes Responsibility for Workforce programs in Gulf Coast Region	0.32	0	0	1	0.47
Earned Income Tax Credit Phase Out for Level for Current Year	$12009	$11950	$11300	$12500	$370
Implementation of ACT Waiver	0.82	1	0	1	0.38
Pre-Waiver Sanction Regime	0.15	0.18	0	0.29	0.12
Region 6 PRA Penalty Rate	0.39	0	0	1	0.49
ACT Wavier Time Limits Imposed in Harris County	0.68	1	0	1	0.47
Welfare and workforce agencies implement diversion programs	0.46	0	0	1	0.5
Child Care Subsidy Variables					
State/Federal Child Care Subsidies	0.11	0	0	1	0.31
Parental Co-Payments	0.6	1	0	1	0.49
Maximum Daily Payment to Providers for Subsidized Center Care	$17.35	$17.24	$15.35	$20.09	$1.41
Availability of Child Care					
Youngest Child age-eligible for Head Start	0.2	0	0	1	0.4
Youngest child age-eligible for public school	0.12	0	0	1	0.33
Child Care Availability	3.14	1.24	0	220.14	9.94
Head Start Availability	0.11	0.06	0	9.41	0.28
Pre-K availability	0.48	0.3	0	12.78	0.67
2. Child Care Administrative Variables					
Binary=1 after August 1996, indicating statewide takeover of Child Care Subsidy Administration by TWC from TDHS	0.76	1	0	1	0.43
Binary=1 if date is after Oct 1998, when GCWB assumes full oversight of CCMS in Gulf Coast Area	0.2	0	0	1	0.4
3 Human Capital/Socio-Demographic Variables					
Age	26.79	26	0	99	6.72
Education Years	8.63	11	0	12	4.88

	Mean	Median	Minimum	Maximum	Standard Deviation
Education Unknown	0.23	0	0	1	0.42
Female Casehead	0.995	1	0	1	0.07
Currently Married	0.02	0	0	1	0.12
Previously Married	0.06	0	0	1	0.24
Casehead Black	0.79	1	0	1	0.41
Casehead Hispanic	0.12	0	0	1	0.32
Casehead Other Minority	0.01	0	0	1	0.09
Number of Children	1.96	2	1	9	1.03
Age of youngest child (months)	39.51	35	0	209	25.79
Most Employable (Tier 1)	0.54	1	0	1	0.5
Least Employable (Tier 3)	0.16	0	0	1	0.37
Informal Care Voucher	0.03	0	0	1	0.18
Person over 13 in Case	0.02	0	0	1	0.14
4. Costs of Working					
Cost of Space	$316	$308	$174	$690	$59.92
Transportation Costs	$23.20	$23.50	$12.22	$46.04	$3.49
5. Local Labor Market Conditions					
Growth Rate Non-durable Manufacturing, monthly	0.00004	0	-0.01	0.01	0.01
Growth Rate Trade, monthly	0.0026	0.01	-0.04	0.02	0.01
Growth Rate Personal Services, monthly	0.0038	0.01	-0.03	0.01	0.01
Growth Rate Government, monthly	0.0010	0	-0.05	0.06	0.02
6. Community Characteristics					
Household Income in ZIP code 1989	$24051	$22202	$10538	$72950	$8270
Percent Black in ZIP Code, 1990	0.4	0.32	0	0.96	0.3
Percent Hispanic in ZIP Code, 1990	0.21	0.17	0.01	0.94	0.16
Percent Other Minority in ZIP Code, 1990	0.04	0.02	0	0.28	0.05
Availability of Public Transportation in ZIP Code, 1990	0.87	1	0	1	0.33
Percent of Children in poverty in ZIP Code, 1990	0.32	0.32	0	0.63	0.16

Details of Model Specification

Fixed and Random Effect Estimation

Due to the dependence of observations in family-level longitudinal data, both the employment and earnings equations are fitted using fixed effect and random effect estimation procedures, [25] which would control for unmeasured heterogeneity that pooled ordinary least square ignores. When using fixed effects estimators, the unobserved

family specific effects are assumed to be constant over time, which should allow one to get consistent estimates. However, it is not an efficient estimator since it does not consider the cross-sectional variation in the data. A random effects estimator is a proper alternative for this problem. However, a random effects estimator requires another assumption for consistency: that the included predictor variables should be independent from random effects in the model. These properties of employing two estimators will be tested below. To estimate the earnings equation, the following specification is used:

$$\log(\text{earning}_{it}) = \alpha + X_{it}\beta + \upsilon_i + \varepsilon_{it}$$

Where X_{it} represents the explanatory variable matrix, β is corresponding estimates vector, υ_i indicates the family specific fixed or random effects and ε_{it} is error or white noise. The fixed and random effects are applied at the household level and heteroskedastic standard errors are corrected by using White standard errors.[26]

The employment equation is specified:

$$\text{logit}(\text{employment}_{it}) = \alpha + X_{it}\beta$$

where employment is a binary variable, X_{it} is the explanatory variable matrix, and β is the corresponding estimates vector. The generalized estimating equation (GEE) estimator[27] with a binomial distribution and logit link function is employed to get parameter estimates.

Detailed Tests of Model Specification

In addition to the F and χ^2 tests reported in Table A-2 for each equation, two tests of the fixed and random effect specifications were performed. The first of the two tests is the Breusch and Pagan (as modified by Baltagi and Li Qi) Lagrange multiplier test of the null hypothesis that the family specific effect is fixed, which means the variance of the family specific error term is 0, against the alternative hypothesis of a random effect.[28] The test statistic is distributed χ^2_1 with a critical value of 6.63 at the $\alpha=0.01$ level. The value of the statistic is 112,075, which is far above the critical value indicating rejection

---

[25] Green, 1997, Chapters 14 and 19.
[26] White (1980), pp. 817-838.
[27] Liang, K.Y.and S.L.Zeger (1986), p. 13-22.

of the null. The outcome of this test indicates that the ordinary least squares model with no family-specific effect is inadequate, and that a random effects or fixed effects model would be preferred over ordinary least squares.

The other test conducted was the Hausman specification test for correlation between included predictor variables and the random effects of the family.[29] The null hypothesis of no correlation is indirectly addressed by testing for equality of the estimated fixed and random effect model coefficients. If the null hypothesis is true, then the random effects model estimates are efficient and consistent, and thus the estimates produced by the two models would be very nearly equal. However if the null hypothesis is false, then the coefficients of the random effects model are no longer consistent, whereas the fixed effect model coefficients still are. Thus, divergence of the estimated coefficients indicates correlation between the family effect and the included variables. The test statistic is distributed χ^2_{32} with a critical value of 53.49 at the α=0.01 level. The obtained value of the statistic is 363.22, which is far above the critical value indicating rejection of the null. The outcome of this test indicates that the estimated fixed and random coefficient models differ significantly. This divergence indicates that the coefficients of the random effect model are probably biased, and for this reason the fixed effect model is to be preferred.[30]

The outcome of the Hausman test is not surprising. In the article describing this procedure, Hausman gives an example of a situation in which this kind of correlation and bias would occur. He hypothesized an immeasurable attribute 'spunk' that would be held in varying degrees by the members of the sample. 'Spunk' would positively influence a person's likelihood of becoming educated and it would also have a positive association with income. In an earnings equation that included education as a predictor variable, 'spunk' would be part of the error term, as well as being correlated with the other predictor variable education. This hypothetical milieu describes exactly the situation we might have in the equations fitted.

---

[28] Breusch, T., and A. Pagan (1980); Baltagi, B.H., and Li Qi (1990).
[29] J.A. Hausman (1978).

In summary, the outcome of the Breusch and Pagan test indicated that a random effect model fits the data much better than ordinary least squares without any family specific effect. The Hausman test suggests that coefficients estimated with the random effect model may be biased. Because the coefficients of the random effects model are likely to be biased, the fixed effect model coefficients are probably the most appropriate for the purposes of statistical inference. However, for the sake of completeness, Table A-2 displays coefficients for all three procedures—ordinary, fixed-effects, and random-effects models.

---

[30] The random effects model was based on the traditional specification in Green (1997), in which the covariance of the fixed effect over time is constant. Attempts to estimate a more flexible model with an unstructured covariance matrix were not successful.

Table A-2:
Results of Fitting the Equations for Harris County, Texas

	Ordinary Specification				Random Effects Specification				Fixed Effects Specification			
	Employment		Earnings		Employment		Earnings		Employment		Earnings	
	Coefficient	p>|z|	Coefficient	p>|z|	Coefficient	p>|z|	Coefficient	p>|z|	Coefficient	p>|z|	Coefficient	p>|z|
Policy and Administrative Variables of CCMS System												
Subsidized Child Care Funding per Poor Child in Harris County	0.0010	0.02	-0.0021	0.12	0.00084	0.01	-	-	0.00175	0.01	-0.000073	0.92
TANF CCMS Funds Freed-Up For Non-TANF income Eligibles	-0.000085	0.06	-	-	-0.000083	0.03	0.00027	0.00	-0.00018	0.01	0.00035	0.00
Parental Co-Payment Rate	0.061	0.00	0.148	0.00	0.037	0.00	0.086	0.00	0.043	0.00	0.060	0.00
State Reimbursement Rate	-0.013	0.00	-0.060	0.00	-0.0082	0.00	-0.028	0.00	-0.0091	0.00	-0.028	0.00
Statewide Takeover of Child Care Subsidy Administration By TWC fromTDHS	-0.056	0.00	-0.173	0.00	-0.020	0.00	-0.136	0.00	-0.032	0.07	-0.130	0.00
Gulf Coast LWFDB Assumes Full Oversight of CCMS in Gulf Coast Area	-	-	-0.029	0.12	0.014	0.01	-	-	0.031	0.01	-	-
Other Policy and Administrative Variables												
Binary for PW/RORA and First Minimum Wage increase (10/1/96)	0.094	0.00	0.226	0.00	0.045	0.00	0.238	0.00	0.083	0.00	0.245	0.00
Second minimum wage increase (9/1/97)	-0.023	0.06	0.054	0.10	-0.016	0.06	0.030	0.07	-0.041	0.02	0.031	0.13
Gulf Coast LWDB Assumes Responsibility for Workforce Programs in Gulf Coast Region	0.017	0.03	0.052	0.01	0.0059	0.32	0.037	0.00	-	-	0.047	0.00
Earned income Credit	0.033	0.01	-	-	-	-	0.027	0.38	-	-	0.093	0.00
Implementation of ACT Waiver	0.043	0.00	0.150	0.00	0.032	0.00	0.144	0.00	0.077	0.00	0.161	0.00
Pre-Waiver Sanction Regime	0.126	0.32	1.085	0.00	0.186	0.00	1.391	0.00	0.433	0.00	1.563	0.00
Region 6 PRA Penalty Rate	-0.026	0.16	0.100	0.03	-	-	0.110	-	-	-	0.120	0.00
ACT Wavier Time Limits Imposed in Harris County	-	-	0.158	0.00	0.034	0.00	0.064	0.00	0.056	0.00	0.051	0.01
Welfare And Workforce Agencies Implement Diversion Programs	0.00030	0.98	-0.055	0.02	-	-	-0.052	-	-	-	-0.065	0.00
Availability of Child Care and Early Childhood Education												
Youngest Child Age-Eligible for Head Start	0.015	0.00	0.087	0.00	-	-	0.023	0.00	-	-	0.021	0.01
Youngest Child Age-Eligible for Public School	0.029	0.00	0.041	0.02	0.013	0.07	-	-	0.037	0.00	-	-
Child Care Capacity in ZIP Code	0.0087	0.00	-	-	-	-	-0.013	0.17	-	-	-0.011	0.31
Head Start Avilability	0.046	0.00	-0.031	0.02	-	-	-	-	-	-	-	-
Pre-K Availability	-0.013	0.00	0.017	0.01	-	-	-	-	-	-	-0.013	0.29

Table A-2:
Results of Fitting the Equations for Harris County, Texas (Continued)

	Ordinary Specification				Random Effects Specification				Fixed Effects Specification			
	Employment		Earnings		Employment		Earnings		Employment		Earnings	
	Coefficient	p>|z|	Coefficient	p>|z|	Coefficient	p>|z|	Coefficient	p>|z|	Coefficient	p>|z|	Coefficient	p>|z|
Human Capital and Sociodemographic Characteristics												
Age	0.022	0.00	0.076	0.00	0.0084	0.00	0.044	0.00	0.015	0.00	0.025	0.00
The Square of Age	-0.038	0.00	-0.093	0.00	-0.014	0.00	-0.044	0.00	-0.019	0.00	-0.030	0.00
Education Years	0.019	0.00	0.053	0.00	0.025	0.00	0.066	0.00	-	-	-	-
Education Unknown	0.230	0.00	0.765	0.00	0.308	0.00	1.021	0.00	-	-	-	-
Female Gender	0.275	0.00	-	-	0.193	0.00	-0.197	0.30	-	-	-	-
Currently Married	0.029	0.01	-	-	0.032	0.32	-	-	-0.093	0.20	-0.205	0.03
Previously Married (if not currently married)	0.097	0.00	0.164	0.00	0.083	0.00	0.133	0.00	-	-	-	-
Client Is Black	0.074	0.00	-0.060	0.00	0.049	0.00	-0.016	0.70	-	-	-	-
Client Is Hispanic	0.012	0.05	0.100	0.00	-0.023	0.18	0.078	0.13	-	-	-	-
Client Is Other Minority Race	-0.219	0.00	-0.049	0.43	-0.178	0.00	0.246	0.13	-	-	-	-
Number of Children	-0.015	0.00	-0.045	0.00	0.013	0.07	0.030	0.00	0.054	0.00	0.045	0.00
Age of Youngest Child	0.00092	0.00	0.0019	0.00	0.0006	0.00	0.0011	0.00	0.0014	0.00	-0.00073	0.06
Client Is in Tier 1 (Most Employable)	-0.0050	0.13	-0.058	0.00	0.030	0.01	0.099	0.01	0.045	0.00	0.143	0.00
Client Is in Tier 3 (Least Employable)	-0.067	0.00	-0.095	0.00	-0.032	0.01	-0.056	0.01	-0.015	0.24	0.032	0.23
Client Is Using informal Care	-0.035	0.00	-0.026	0.20	-	-	-0.081	-	0.185	0.09	-0.096	0.00
Household Includes Person Over 13	0.066	0.19	-	-	-	-	-	-	-	-	-	-
Costs of Working												
Median Rent per Room of Houses in Zip Code	-	-	0.020	0.03	-	-	0.067	0.00	-	-	0.069	0.00
Travel Time to Work	0.0011	0.05	-0.0037	0.01	-	-	-0.0073	0.00	-	-	-0.0075	0.01
Local Labor Market Conditions												
Employment Growth Rate--Nondurable Manufacturing	1.265	0.00	6.059	0.00	0.619	0.00	7.261	0.00	1.751	0.00	7.990	0.00
Employment Growth Rate--Trade	-0.594	0.00	-0.717	0.18	-	-	-	-	-	-	-	-
Employment Growth Rate--Services	0.440	0.13	-2.058	0.01	-	-	-3.309	0.00	-0.296	0.31	-3.895	0.00
Employment Growth Rate--Government	0.146	0.03	-	-	0.048	0.29	-	-	-	-	-	-
Community Characteristics												
Median Household Income in ZIP Code	-0.003	0.00	0.0062	0.85	-0.0022	0.03	-	-	-0.007	0.00	-	-
Percent Black in Zip Code	-0.058	0.00	-0.092	0.02	-0.043	0.22	-0.019	0.65	-0.038	0.36	0.041	0.39
Percent Hispanic in Zip Code	-0.133	0.00	0.306	0.00	-0.113	0.02	-0.059	0.37	-0.185	0.00	0.081	0.29
Percent Other Minority in Zip Code	-0.110	0.01	-	-	0.068	0.60	0.300	0.10	-0.015	0.92	0.221	0.30
Binary=1 If More Than 1 Percent of The Workers in The Zip Code Utilize Public Transportation	0.065	0.00	0.156	0.00	0.039	0.01	0.133	0.00	0.042	0.06	0.105	0.00
Percent of The Children in The Zip Code Who Were Below Poverty	-0.270	0.00	-0.282	0.00	-0.105	0.08	-	-	-	-	-	-
Constant Term	-0.912	0.00	5.248	0.00	-0.513	0.00	4.021	0.00	-0.101	0.21	4.480	0.00
Test for Overall Significance of Model	χ^2_{45} =8250.93 Prob > χ^2 = 0.0000		F(40, 80944) = 188.64 Prob > F = 0.0000		χ^2_{35} =964.6 Prob > χ^2 = 0.0000		χ^2_{37} =6540.58 Prob > χ^2 = 0.0000		χ^2_{28} =3200.24 Prob > χ^2 = 0.0000		F(33,74315) = 188.71 Prob > F = 0.0000	