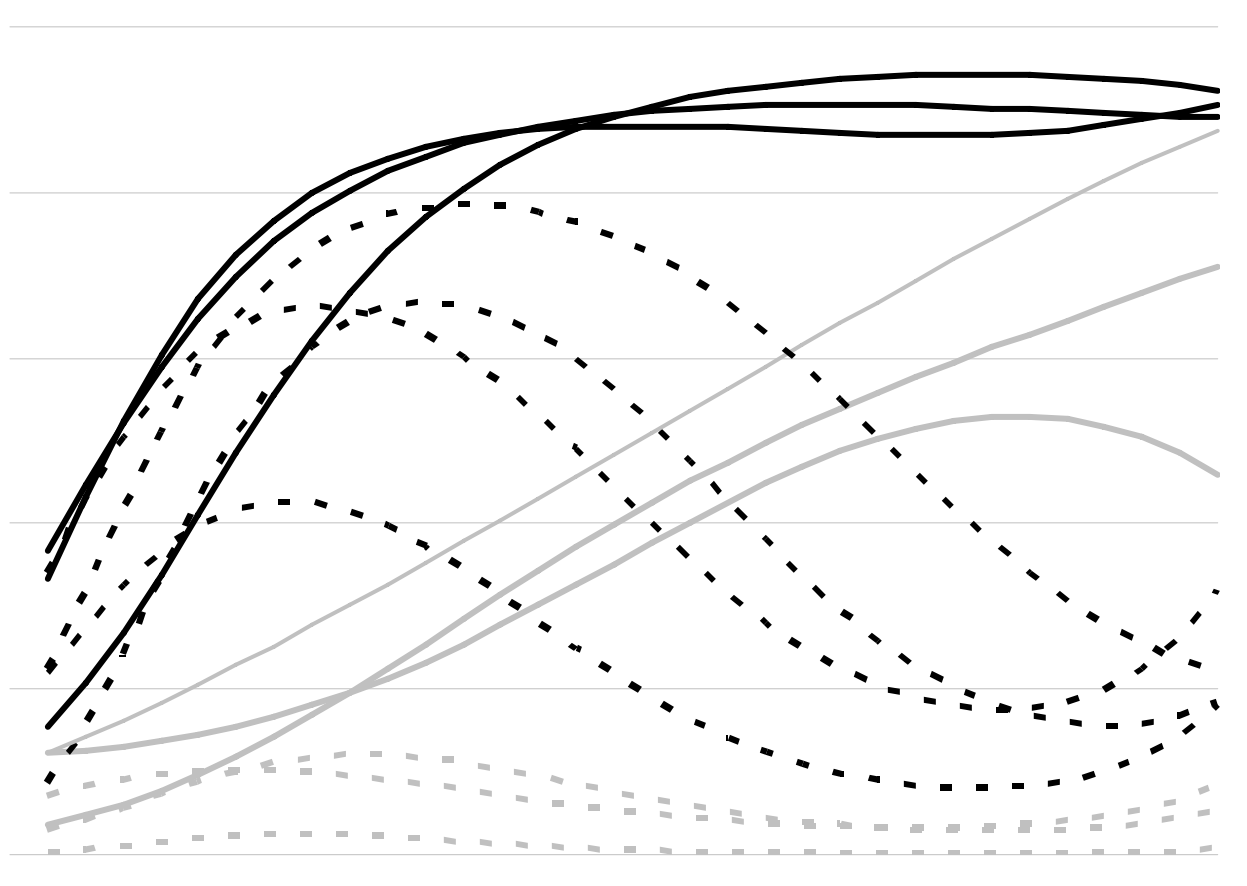
Coming of Age: Employment Outcomes for Youth Who Age Out of Foster Care Through Their Middle Twenties



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Coming of Age: Employment Outcomes for Youth Who Age Out of Foster Care Through Their Middle Twenties

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Contents

Executive Summary

A youth's departure from home marks the beginning of adulthood and a new stage in a young adult's life. This critical juncture and the surrounding years, often referred to as the transition to adulthood, is increasingly recognized as a distinct developmental stage between adolescence and adulthood (Arnett, 2004). Youth who reach this stage and are living in foster care are often at a significant disadvantage. In 2005, over 24,000 youths found themselves in this circumstance (DHHS, 2006). They "aged out" of the foster care system and entered into the world of adulthood relatively alone.

Studies of former foster youth who age out of care find that these youth generally experience high unemployment, unstable employment patterns, and earn very low incomes in the period between ages 18 and 21 (Cook, 1991; Courtney et al., 2001; Dworsky and Courtney, 2001; Goerge, Bilaver, Lee, Needell, Brookhart and Jackman, 2002). The Department of Health and Human Services (DHHS) Office of the Assistant Secretary for Planning and Evaluation (ASPE) requested this study to examine employment and earnings outcomes for youth, through their mid-twenties, who age out of foster care. The key question and focus of the study is whether foster youth catch up or continue to experience less employment and significantly lower earnings than their peers even into their mid-twenties.

The study linked child welfare, Unemployment Insurance (UI), and public assistance administrative data to assess employment outcomes and welfare receipt for youth who age out of foster care. Child welfare data allow researchers to identify youth who age out of foster care, while the UI data provide information on employment and earnings. Public assistance data reveal later welfare receipt. Information is linked between sources using youths' social security numbers. Analyses are conducted in three states: California, Minnesota, and North Carolina. The sample of interest is youth who were 17 years old and in foster care in one of the participating states on December 31,1998, and who eventually aged out of care. A comparison group of youth from low-income families is created using the public assistance data, and baseline national estimates are derived from the National Longitudinal Survey of Youth (NLSY97). Descriptive, multivariate, and trajectory analysis techniques are employed. Youth outcomes are assessed from age 16 to the first quarter of age 24.

Key Findings

Youth who age out of foster care continue to experience poor employment outcomes at age 24

At age 24, youth who age out of foster care do not fare well on a variety of employment outcomes. Compared to youth nationally and even youth from low-income families, they are less likely to be employed or employed regularly, and, not surprisingly, they earn very little. At age 24, average monthly earnings for youth who age out of foster care who worked are $690 in California, $575 in Minnesota, and $450 in North Carolina, compared to $1,535 for youth nationally. Employment and earnings differences between youth who age out of foster care and youth from low-income families remain in California and Minnesota even when controlling for demographic factors. Case history factors do not appear to play an important role in influencing employment outcomes.

Youth who age out of foster care tend to follow one of four employment trajectories as they transition to adulthood

Youth who age out of foster care exhibit four distinct patterns in connecting to the workforce. Overall about one-third to one-half of these youth follows a path that leads to relatively positive employment outcomes by age 24. At the same time, the other half to two-thirds of these youth exhibit patterns leading to poorer outcomes at age 24.

Positive outcomes at age 24:

- *Consistently Connected*: These youth maintain relatively high probabilities of employment between the ages of 18 and 24, and their average earnings are comparable to youth nationally. This group appears to begin connecting to the workforce prior to age 18. This group represents one-sixth to one-quarter of the youth in the states (25 percent in California, 22 percent in Minnesota, and 16 percent in North Carolina).

- *Later Connected*: Youth in this group have a slow start, but steadily increase their probability of employment and earnings throughout their early twenties. Their average earnings do not reach levels comparable to youth nationally but do show an upward trend. This group does not appear connected to the workforce prior to age 18. These youth represent one-sixth to one-fifth of youth who age out of foster care in the study states (20 percent in California, 21 percent in Minnesota, and 16 percent in North Carolina).

Poor outcomes at age 24:

- *Never Connected*: These youth have very low probabilities of employment and hardly any earnings at any time between ages 18 and 24 or prior to age 18. This group represents one-fifth to one-third of the youth who age out of foster care in these states (33 percent in California, 29 percent in Minnesota, and 22 percent in North Carolina). Some portion of these youth may not be covered in the earnings data.

- *Initially Connected*: Youth in this group begin making connections to the workforce prior to adulthood and maintain a high probability of employment through their late teens. Their probabilities of employment then decline rapidly in their early twenties. The average earnings for this group never get very high, which might explain the drop in employment, if lower earnings result in less incentive to continue working. The drop-off in employment for some portion of these youth might also be explained by changes to jobs not covered by UI data, moves out of state, incarceration, or childbearing. This group represents one-fifth to almost one-half of the youth in these states (22 percent in California, 29 percent in Minnesota, and 46 percent in North Carolina).

Implications

Pathways to adult services

Extending services to youth after age 18 is the focus of many recent initiatives and efforts to support youth aging out of foster care. Findings from this report would suggest, however, that risk for these youth extend beyond even age 21. Working at age 21 does not appear to be a guarantee that youth will sustain employment through age 24. In fact, significant changes in employment trajectories appear to occur for many youth who age out of foster care right around age 21. Some portion of these youth may need additional assistance staying connected to the labor market or accessing adult service systems.

Importance of ages 16 to 18

Ages 16 to 18 are a period of significant employment activity for many youth aging out of foster care. Rapid increases in employment occur for *consistently connected* youth and *initially connected* youth between the ages of 16 and 18. Similarly, results show that employment prior to age 18 is associated with positive employment outcomes at age 24 for youth in California, Minnesota, and North Carolina. This evidence suggests that helping youth connect to the workforce prior to adulthood may have benefits later.

Tailoring programs

As programs to serve former foster youth continue to evolve, policymakers and practitioners might consider strategies for tailoring programs to best meet the needs of youth on different trajectories. For example, those youth *initially connected* to the labor market exhibit a desire to work early on, but may need additional training or education to find sustainable, long-term employment. Those who are *later connected* may require extra supports while they are in school or receiving training in preparation for later connection to the workforce. For those youth who are *never connected*, the challenge may be finding them and identifying their service needs. Are they homeless, disabled, incarcerated, or living with their biological parents or extended family? The Chafee National Youth in Transition Database (NYTD) could be an important tool to help states identify the types of youth that follow different paths and their service needs. This database is designed to identify the numbers and characteristics of youth receiving Independent Living services, track the type and quantity of those services, and develop outcome measures to assess state performance in serving these youth.

Future research

This study analyzed outcomes for youth who aged out of foster care in the late 1990s, prior to the passage of the Chafee Foster Care Independence Act, which strengthened independent

living programs for youth in foster care and focused attention on this population. In the future, researchers may want to examine later cohorts of youth who age out of foster care that may have benefited from the Chafee Foster Care Independence programs. With each additional year of earnings data, another age cohort can be analyzed. Researchers could also examine the role of education and other service systems in supporting these youth. Further exploration is also needed to understand the different employment paths these youth follow. For example, what are the resiliency factors that enable youth to age out of foster care and connect consistently to the workforce? This group could provide insights into the factors that help youth aging out of foster care succeed.

Section 1: Introduction

A youth's departure from home marks the beginning of adulthood and a new stage in life. This critical juncture and the surrounding years, often referred to as the "transition to adulthood," is increasingly being recognized as a distinct developmental stage between adolescence and adulthood (Arnett, 2004). Youth who reach this stage and are living in foster care are often at a significant disadvantage. In 2005, over 24,000 youths found themselves in this circumstance (DHHS, 2006). They "aged out" of the foster care system and entered into the world of adulthood relatively alone.

Research suggests these youth do not fare well. Youth who age out of foster care often have bouts of homelessness, criminal activity, and incarceration (Courtney, Piliavin, and Grogan-Kaylor, 1998; Courtney, Piliavin, Grogan-Kaylor, and Nesmith, 2001). Many suffer from physical and mental health challenges as a result of past abuse or neglect.

A primary task in transitioning to adulthood, and the focus of this report, is finding and sustaining employment. Studies of former foster youth who age out of foster care find that these youth generally experience high unemployment, unstable employment patterns, and earn very low incomes in the period between ages 18 and 21 (Cook, 1991; Courtney et al., 2001; Dworsky and Courtney, 2001; Goerge, Bilaver, Lee, Needell, Brookhart and Jackman, 2002). Studies also document consistently low rates of high school completion and welfare receipt (Courtney et al., 1998; Courtney et al., 2001; Festinger, 1983; McMillen and Tucker, 1999; Pecora, Kessler, Williams, O'Brien, Downs, English, et al., 2003).

What is less known about these youth is how they fare in their mid-twenties, after they have made the initial transition into adulthood. It might be hypothesized that some would experience unstable employment in their initial attempts to connect to the workforce, but that these patterns would stabilize when youth reached their mid-twenties. If these patterns do not stabilize, however, addressing job readiness and educational needs early in the transition to adulthood may be important to shaping the future trajectories of these youth.

The Department of Health and Human Services (DHHS) Office of the Assistant Secretary for Planning and Evaluation (ASPE) requested this study to examine employment and earnings outcomes for youth, through their mid-twenties, who age out of foster care. Key findings suggest:

- ***Low rates of employment persist through age 24:*** About three out of five youth who age out of foster care are working at age 24 in all three states, a rate lower than that of youth nationally and youth from low-income families.

- ***Low earnings persist through age 24:*** Average monthly earnings for youth who age out of foster care remain low at age 24 in all three states ($690 in California, $575 in Minnesota, and $450 in North Carolina). These earnings are substantially lower than earnings for youth nationally, who earn $1,535 a month.

- ***Four patterns of connectedness to the workforce emerge:*** *Never connected* youth have a consistently low probability of employment between ages 18 and 24. *Consistently connected* youth maintain a high probability of employment during this period and achieve earnings comparable to national averages. *Initially connected* youth have a high probability of employment around ages 18 and 19, but this probability declines sharply by age 22. *Later connected* youth have a slow start but steadily increase their probability of employment through age 24.

Basic Study Methods

Child welfare, unemployment insurance (UI), and TANF administrative data are linked to assess employment outcomes and welfare receipt for youth who age out of foster care. Child welfare data allow researchers to identify youth who age out of foster care, while the UI data provide information on employment and earnings. TANF data reveal later welfare receipt. Information is linked between sources using youths' social security numbers. A comparison group of youth from low-income families is created using TANF data, and baseline national estimates are derived from the National Longitudinal Survey of Youth (NLSY97). Analyses are conducted in three states: California, Minnesota, and North Carolina. Descriptive, multivariate, and trajectory analysis techniques are employed. Youth outcomes are assessed from age 16 to the first quarter of age 24.

Section 2: Background

Since the mid-1980s federal legislators have focused increased attention on youth who age out of the foster care system in recognition of the unique challenges they face during their transition to adulthood and independence. The Independent Living Initiative in 1985 (Public Law 99-272) amended Title IV-E of the Social Security Act to provide federal funding to states to help foster youth develop independent living skills. This program was reauthorized indefinitely in 1993 (Public Law 103-66) as part of the Omnibus Budget Reconciliation Act. Most recently, the Foster Care Independence Act (FCIA) of 1999 (Public Law 106-169) amended Title IV-E to provide states with more funding and greater flexibility in designing services to help foster youth transition from foster care to self-sufficiency. This law, which included the John H. Chafee Foster Care Independence Program, doubled funding formerly provided through the Title IV-E Independent Living Program. It allowed states to assist youth ages 18 to 21 who may have left foster care, and to extend Medicaid coverage for foster care youth to age 21. The law also permits states to use funds to assist youth with room and board payments. It is within this policy context of additional federal support and heightened interest in how youth are faring that the current study, which examines the employment outcomes of former foster youth through their mid-twenties, was conducted.

Prior Research

Prior research indicates that youth who age out of foster care tend to have less stable employment and lower earnings than their same-age peers (Cook, 1991; Courtney, Dworsky, Keller, & Havlicek, 2005; Goerge et al., 2002; Pecora et al., 2006; Singer, 2006). Findings across studies are strikingly similar regardless of whether researchers survey the youth directly (Courtney et al., 2005; Pecora et al., 2006) or analyze employment data from administrative records (Dworsky, 2005; Goerge et al., 2002; Singer, 2006). The Midwest Evaluation of the Adult Functioning of Former Foster Youth surveyed youth from Illinois, Iowa, and Wisconsin and found that compared to a nationally representative sample of 19-year-olds who had participated in the National Longitudinal Study of Adolescent Health, foster youth were significantly less likely to be employed at age 19 (40 percent compared to 58 percent) (Courtney et al. 2005). Goerge et al. (2002) also found a similar pattern of lower employment among foster youth using administrative data and comparing them to a nationally representative sample of youth ages 16 to 19 from the Current Population Survey (CPS). Further, the study found that foster youth tend to have significantly lower earnings than a comparable sample of low-income youth.

Other studies using administrative data find that the majority of foster youth are employed at some point after they leave the system but have very low earnings. A recent report using Utah state administrative data found that 86 percent of youth who exited foster care between 1999 and 2003 were employed at some point within three years of leaving the system (Singer, 2006). Another study that used administrative data from Wisconsin examined employment outcomes two years after youth exited care between 1992 and 1998 and found that 80 percent were employed at some point during that time (Dworsky, 2005). In both studies, earnings were significantly low and remained below the poverty threshold.

Few studies have tracked employment outcomes for this group into adulthood. One exception is the Northwest Foster Care Alumni Study, which surveyed youth who had been in family foster care between 1988 and 1998. Although 24 was the average age of the sample, many were between ages 26 and 33. Like the aforementioned studies, former foster youth were less likely to have been employed than the national average for adults between the ages of 20 and 34 (80 percent compared to 95 percent) (Pecora et al., 2006).

Notably, with the exception of the Northwest Foster Care Alumni Study, most research to date has tracked foster youth employment outcomes one to three years after youth have discharged from care. This relatively short time period is due in large part to the fact that only recently have data from automated child welfare data systems become viable for analysis. Prior to 2006, data collected by states typically had limited research utility. Longer tracking periods have only become possible as more time has passed.

The current study builds most directly on prior

work conducted by Goerge and colleagues (2002), who incorporated both child welfare administrative data and Unemployment Insurance Wage Reporting Data. While they were able to examine youth employment outcomes two years after leaving foster care in California, Illinois, and South Carolina, this report presents employment outcomes six years after care for former foster youth from California, Minnesota, and North Carolina. A key question and focus of this report is whether youth who age out of foster care catch up or continue to experience less employment and significantly lower earnings than their peers even into their mid-twenties.

This study, like prior research, includes comparison groups. It compares youth who age out of foster care to a nationally representative sample of similar-age youth from the NLSY97 and a low-income sample of youth from welfare caseloads in each of the three participating states. Researchers also considered a comparison group of foster youth who had left the child welfare system for reasons other than aging out (e.g., reunification, adoption) but ultimately decided not to use these comparison groups. The main drawback to using these child welfare comparison groups was that youth age 16 and older who are reunified or adopted before exiting foster care are not representative of most youth who exit for these reasons. Therefore, any differences found in the study between age-out youth and reunified or adopted youth would not necessarily have reflected the true differences between youth who age out of foster care and a more representative sample of reunified or adopted youth.

Methods for This Study

The following provides a brief overview of the methods employed in the study. A more detailed description of methods and procedures is provided in the technical appendix (beginning on page 35).

State Selection

Analyses were conducted in three states: California, Minnesota, and North Carolina. States were selected based on the availability of child welfare and employment data, prior experience linking administrative data sources, and willingness to participate in the study. Each of the three states is demographically diverse and uses a different approach to serving youth who age out of the foster care system.

Data

Data for the study come from three state administrative sources: child welfare, public assistance, and Unemployment Insurance. Additional data for the national comparison estimates come from the NLSY97.

- *State Child Welfare Administrative Data:* Child welfare data were used to identify a sample of foster youth in California, Minnesota, and North Carolina. Discharge information in each state was used to distinguish the study group of interest--youth who age out of foster care--from youth who had exited for other reasons (e.g., reunified with their families and adoption). This data source also provided information on important case characteristics such as the reason youth entered the system, their age at entry, and their foster care placement history.

- *Unemployment Insurance (UI) Wage Reporting Data*: In each state, employers who pay a payroll tax based on an employee's earnings are required to report those earnings quarterly. This data source was used to obtain quarterly earnings information for youth in the study and includes most but not all types of employment (important limitations are described on page 11). Outcome measures related to employment and earnings come from this source.

Table 1. Sample Sizes*: Key Constructs

	Age-Out	Low-Income	NLSY
California	2,697	43,725	
Minnesota	320	4,786	
North Carolina	284	2,709	
National Sample			878

*****Sample sizes are for working youth only. CA, MN, and NC samples include youth age 17 in 1998. The NLSY sample includes youth who were 18 in 1998.

[1] If a youth in the child welfare administrative data also appeared in the employment data, but with an invalid social security number, there was no way to distinguish whether that youth was unemployed or employed with an invalid number. These youth were included and considered unemployed.

- *Public Assistance Data:* Each state collects statewide public assistance data on caregivers and dependents who receive Temporary Assistance for Needy Families (TANF). These data contain information on the types of assistance and spells of that receipt. These data were used to create a comparison sample of low-income youth in all three states. In Minnesota and North Carolina, public assistance data were also used to track welfare receipt after youth left foster care. In California, welfare data for this purpose were not available.

- *National Longitudinal Survey of Youth 1997* (NLSY97): The NLSY97 is a national probability sample of approximately 9,000 youth born in the years 1980 through 1984. The youth were first interviewed in 1997 and have been interviewed on an annual basis since. The most recently available data were collected in 2003-2004, representing the seventh round of interviewing. For the purpose of this study, youth born in 1980 were selected, which makes them 18 as of December 31, 1998, a comparable age group to the child welfare population examined. The survey includes questions about employment, earnings, and TANF receipt. These data were used to provide a nationally representative baseline comparison.

Data Linking

Data from each of these sources were combined into one analysis file for each state. Researchers used social security numbers as the primary means to identify the same youth across data systems and to link youth's information into one dataset. In North Carolina researchers also used name and date of birth when linking child welfare and public assistance records. In Minnesota all three data sources were compiled and linked using social security numbers. Minnesota's Department of Human Services and the Department of Employment and Economic Development did the link and provided one dataset to the researchers.

[2] Average monthly earnings are calculated by dividing a youth's total annual earnings by 12. With this calculation, quarters in which a youth had zero earnings are included in this average. The average for the sample is the mean value of the monthly averages of all youth. Averaging quarterly earnings into a monthly measure assumes equal earnings each month, which may not be accurate. This, however, provides an approximation of a youth's monthly earnings.

Cases with Missing or Invalid Social Security Numbers

Child welfare and employment data in each of the states could only be linked for youth with valid social security numbers in the child welfare data systems.[1] Those without a valid social security number could not be included in the study. In California 13 percent of the original sample lacked valid social security numbers, in North Carolina 2 percent lacked valid numbers, and in Minnesota less than 1 percent lacked valid social security numbers.

In California, the only state with sufficient sample sizes to compare youth with and without valid social security numbers, youth were compared on demographic and child welfare case characteristics to determine whether there were any differences between them. Analyses revealed few substantive differences between youth with and without valid social security numbers.

Samples

The analyses included three different samples of youth, two of which serve as comparisons to the study group of interest, youth who age out of foster care. Table 1 shows the sample size for each group in each state. Tables A1-A6 in the Appendix provide detailed demographic information for the age-out and low-income samples, and also include case history information for the age-out sample.

- *Age-Out Sample (study group):* This group includes all youth age 17 and in the child welfare system on December 31, 1998, who have "emancipation" or "age of majority" as their exit reason, or who had missing exit reasons, but exited after their 18th birthday. Employment outcomes are tracked as these youth turn 18 through their first quarter of age 24.

- *Low-Income Comparison Sample:* This group includes all youth age 17 on December 31, 1998 listed as a dependent on a family TANF grant. Employment outcomes are tracked as these youth turn 18 through their first quarter of age 24.

- *National Comparison Sample:* This nationally representative sample includes all youth age 18 in 1998 in the NLSY97. The sample is on average one year older than the child

welfare and low-income comparison groups due to the availability of the NLSY97 data. Employment, earnings, and TANF receipt for these youth through age 24 are gathered from the survey.

This report examines employment and earnings for youth in the three samples described above. In Minnesota and North Carolina it also includes TANF outcomes for the child welfare and low-income samples.

Outcomes are examined through the quarter of the youth's 24th birthday. As this gives the status of the youth on a particular outcome at age 24, this year is referred to as age 24 throughout this report. It should be noted that this year includes three quarters prior to the youth's 24th birthday as well as the quarter of his or her 24th birthday. The other age data points presented in the report use this same approach.

There are several different ways to measure employment and welfare experiences using UI and TANF data, and the following is a description of the key constructs used in the study.

- *Employment:* Earnings reported quarterly are used to indicate whether youth are employed (i.e., had earnings) at any time between ages 18 and 24 and at each age between 18 and 24.

- *Earnings:* Quarterly earnings also are used to estimate average monthly earnings between 18 and 24 and at each age between 18 and 24.[2] The data are also used to determine whether earnings reached a livable wage using data on fair market rents for each state.

- *Stability:* Two measures were constructed to approximate employment stability, defined as consecutive quarters of employment. One measure indicates whether youth have ever been employed for four consecutive quarters (i.e., a full year) by age 24 and what portion of youth achieve the outcome at each age. A significant limitation of this measure is that data are quarterly and not date-specific. This means that youth who worked only one month in each quarter would still be considered employed four consecutive quarters. While this measure suggests that some regular employment occurred, it does not guarantee that the employment was stable. A second measure of stability estimates the portion of quarters in a year youth worked at each age.

- *Connectedness:* This construct considers patterns of connection to the workforce. Analyses identified groups of youth with similar probabilities of employment at a given age over time. These groups include youth who are consistently, initially, later, and never connected to the workforce.

- *TANF Receipt:* Researchers examine whether youth received TANF between ages 18 and 24 in North Carolina and Minnesota, and what portion were receiving TANF at each age.

Analyses

Statistical analyses include bivariate, multivariate, and trajectory models to characterize and assess the employment, earnings, and TANF outcomes for youth in the study.

- *Bivariate:* Researchers calculated and analyzed the sample means for all demographic factors, child welfare case characteristics, employment, earnings, and TANF outcomes for youth who aged out of foster care in each of the states. Similar estimates were produced for demographic, employment, earnings, and TANF outcomes for youth in the low-income and national samples. The analyses were used to examine sample characteristics and employment and TANF trends.

- *Multivariate:* Multivariate analyses included ordinary least squares and logistic regression, and Cox proportional hazard models. These analyses served several purposes. The primary purpose was to determine whether differences between comparison groups in employment, earnings, or stability were maintained after controlling for other factors. Another purpose was to determine which factors were significantly associated with employment, earnings, and stability outcomes for the population of youth who age out of foster care.

- *Trajectory:* Trajectory analyses were conducted on the sample of youth who age out

of foster care in each state to identify distinct employment patterns over time. This method groups youth with similar employment patterns and tracks the probability of employment at each age. Researchers used the semi-parametric group-based approach employed by Nagin (1999).

Limitations

There are a few important limitations to this analysis. First, with regard to the UI data, it is important to note that unemployment insurance does not cover all workers. For example, individuals employed by the military and federal government are not included. Neither is informal work and employment that is "off the books". Unemployment Insurance data explicitly exclude much of the agricultural sector and domestic services, as well as the self-employed. Also, youth who moved out of state, work across state borders, or are incarcerated would not appear in the data. The net effect of this limitation is that the analyses are likely to underestimate employment and earnings within the study samples. Hotz and Scholz (2001) have also concluded that UI administrative data underreport earnings in a study comparing administrative earnings data with survey data on earnings. This finding may be of concern to the current study, but previous research on the employment outcomes of youth aging out of foster care find consistent differences between youth who age out of foster care and other youth regardless of whether they use survey or administrative earnings data.

Second, it is also important to point out that earnings may not perfectly reflect how a youth transitioning into adulthood is faring, or his or her future earning potential. The main reason is that measures of educational attainment, college enrollment, or degrees earned are not present in the data. One advantage of the study design, however, is that it is longitudinal and includes findings through age 24. Presumably many youth who may have been in school around age 17 may have completed high school or post-secondary schooling by then. Another reason these data may not capture fully how these youth are faring is that they only report individual earnings and do not account for earnings from a spouse, roommate, or family member who may also provide support for the youth.

A third limitation pertains to using quarterly, as opposed to date-specific, data. One consequence is that true employment stability cannot be measured. In essence, a youth who may have worked four consecutive quarters may not have had stable or consistent employment each month. With data that are calculated quarterly, such employment patterns cannot be assessed. However, consecutive quarters of employment are an approximation for consistency and reveal regular, if not stable, work. Despite the limitations of UI data, it is nevertheless regarded as one of the most comprehensive sources of earnings data available. In addition, it is a data source that is collected consistently across all states, which is essential for comparative studies such as this one.

A fourth limitation concerns child welfare data. It is important to note that the sample is drawn from youth who were of a particular age in 1998. This period occurs shortly after states implemented statewide automated information systems (SACWIS). While the selected states have noticeably reliable data, it is likely that further improvements to the system and data collection process were made in subsequent years.

A related limitation concerns unmeasured characteristics generally. While analyses adjust for demographic factors and child welfare case characteristics, additional information known to be related to employment outcomes are not available. Examples include family income, social support, educational attainment, and other youth characteristics (e.g., mental and physical health), which can contribute to employment outcomes. This limitation of unmeasured and in some cases unobservable characteristics is not uncommon in research of this nature and may be improved as information systems generally improve. This research, however, makes a substantial contribution to what is currently known using some of the best data available.

Section 3: Employment Outcomes of Youth Who Age Out of Foster Care

Youth who age out of foster care experience lower than average rates of employment and low earnings through age 24,[3] compared to similar age youth nationally and those from low-income families in their respective states. The majority of these youth, however, do work at some point between the ages of 18 and 24 in all three states. Only 15 percent of youth in California never worked during this period. Similarly, 13 percent of youth in Minnesota and 18 percent in North Carolina had no reported earnings. It is uncertain to what extent these youth worked in jobs that would not be included in the UI data, were incarcerated, or moved out of state.

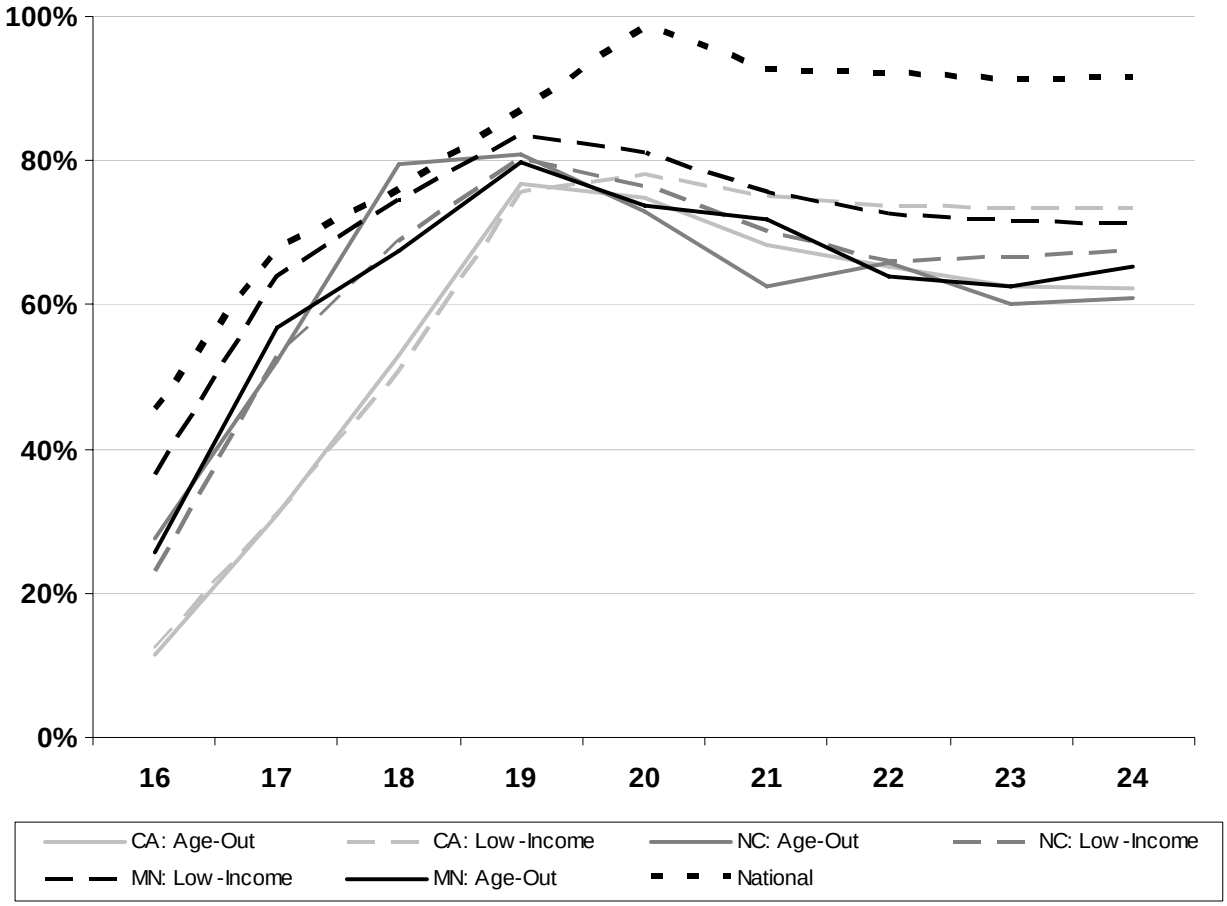
[3]Each age is defined as the four quarters ending in the quarter with that birthday.

The estimates that follow are based on the sample of youth who aged out of foster care and who worked at some point between the ages of 18 and 24. To include those who never worked in estimates of employment outcomes would weight the results heavily toward zero, either in terms of no employment or as zero earnings. Focusing on the working population offers a picture of employment levels for those youth who engaged in work. This population is referred to as "working youth."

Working Youth Who Age Out of Foster Care Are Less Likely to Be Employed than Other Youth at Age 24

Of youth who aged out of foster care and who ever worked during the study period, about three out of five work at age 24 in each of the

Figure 1. Percent of Working Age-Out Youth Employed at Each Age Between 16 and 24



Notes: Each age is defined as the four quarters ending in that birthday.

three states studied (62 percent in California, 65 percent in Minnesota, and 61 percent in North Carolina) (see Figure 1). The portion of youth aging out of foster care who worked is lower than the portion of the comparison groups that worked. Nationally, 92 percent of youth with work histories work at age 24.[4] And, two-thirds to three-quarters of working youth from low-income families work at 24 (74 percent in California, 71 percent in work in Minnesota, and 68 percent in North Carolina).

Differences between working youth who age out of foster care and those from low-income families tend to persist in two of the study states when controlling for other factors like gender, race and ethnicity, prior work experience, unemployment rates, and urbanicity (see Table 2 and description of the full model in Tables A13–A15 in the Appendix).[5]

Specifically, controlling for these factors, low-income working youth in California and Minnesota have a higher likelihood of working at age 24 than do youth who age out of foster care (56 percent in California and 30 percent in Minnesota).

Trends over time suggest that rates of employment for working youth who age out of foster care decline after age 19. In all three states, 70 to 80 percent of these youth work at age 19. This portion then declines steadily through age 24—the last year of available data. This decline after age 19 is not observed for other populations. For youth nationally, rates of employment increase to a high of 99 percent around age 20, drop the next year, and then remain steady between 91 and 93 percent through age 24. Employment rates for low-income youth remain fairly steady through age 24 in California. In Minnesota and North Carolina, rates for low-income youth decline somewhat through age 24, but not as dramatically as do rates for youth who age out of foster care.

These differing patterns suggest that rates of employment for working youth who age out will diverge from other working youth nationally and those from low-income families. This divergence appears to begin around age 20 in all three states and becomes particularly pronounced by age 24.

Table 2. Comparing Youth Who Age Out of Foster Care to Low-Income Youth on Employment at Age 24

	Relative Odds of Being Employed at Age 24
Model Type	
	Logistic
Low-Income (age out is the reference group)	
CA	56% more likely to be employed***
MN	30% more likely to be employed**
NC	NS

Sample Size: CA: 46,094; MN: 4,915; NC: 2,993.
Notes: Age 24 is defined as three quarters prior to 24th birthday and quarter of 24th birthday.
Significance: NS = not significant; * significance at the 10% level; **significance at the 5 percent level; ***significance at the 1% level
Models: adjust for the following factors: female, African American, other race/ethnicity (non-white) (MN & NC only), Native American (CA only), Asian (CA only), Hispanic (CA only), prior work experience, rural (MN & NC only), Los Angeles (CA only), and county unemployment rate at age 24.

Working Youth Who Age Out of Foster Care Increase Their Earnings with Age, but Few Earn a Livable Wage at Age 24

Working youth who age out of foster care in the three study states earn less than $700 a month on average at age 24 ($690 in California, $575 in Minnesota, and $450 in North Carolina) (see Appendix Tables 7–9). State differences in average earnings may be due to variation in the cost of living in each state. Regardless, these youth earn less than youth nationally and youth from low-income families in all three states. Nationally, at age 24, youth earn on average $1,535 per month, more than double the $700 per month on average earned by working youth who age out of foster care in California. Working youth who age out of foster care also earn less on average than youth from low-income families. At age 24, youth from low-income families in California earn $970 per month on average. These youth earn $865 in Minnesota and $570 in North Carolina.

[4] Models include a measure of urbanicity. All national statistics are based on authors' calculations of the National Longitudinal Survey of Youth 1997.
[5] In North Carolina and Minnesota, counties were classified as being "rural" or "not rural" based on their population size. Counties are considered rural if they have a population of less than 100,000. In California urbanicity is conceptualized as Los Angeles and other. Prior research using similar data in California suggests the importance of this differentiation.

Differences in earnings between working youth who age out of foster care and those from low-income families persist in two of the three study states when controlling for other factors like gender, race and ethnicity, prior work experience, unemployment rates, and urbanicity. Controlling for these factors, earnings of youth from low-income families are significantly higher in California (by 11 percent) and Minnesota (by 17 percent).

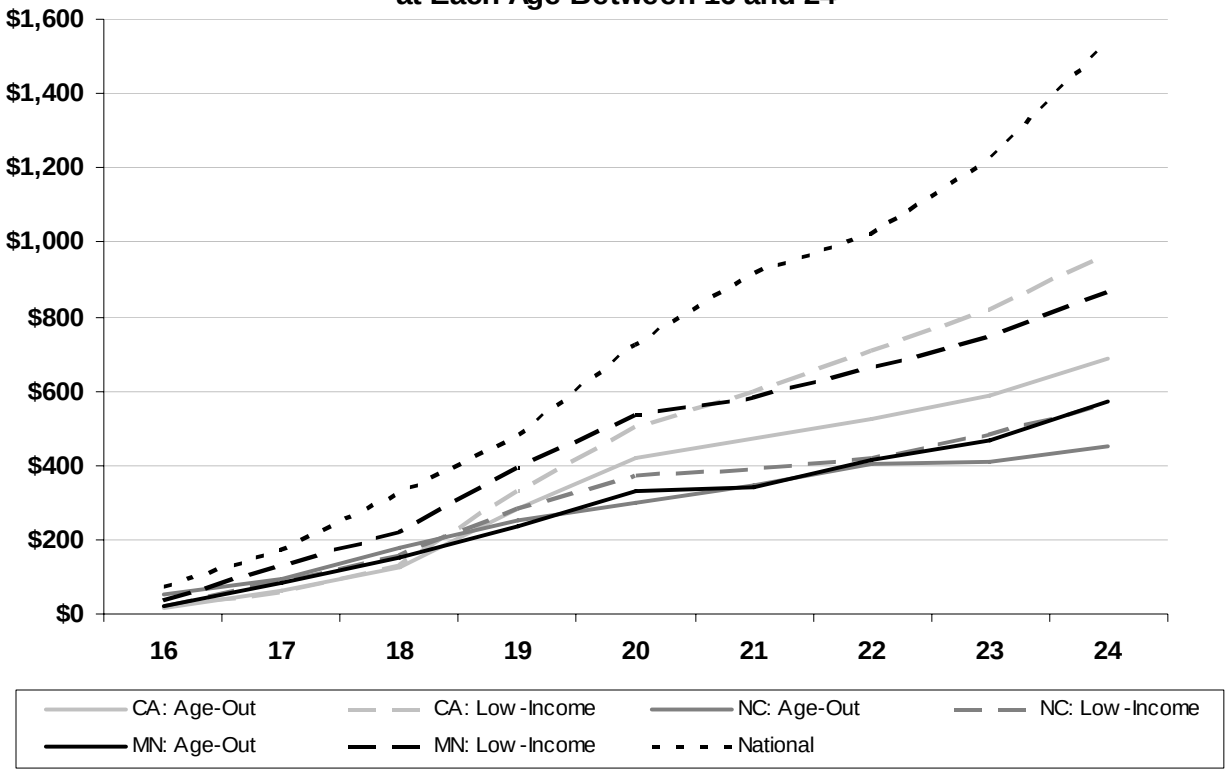
Looking at trends, youth who age out of foster care experience a steady increase in earnings over time, although earnings are not adjusted for inflation. In California, these youths' mean monthly earnings grew by $561 between ages 18 and 24. In Minnesota incomes grew by $421, and in North Carolina they grew by $275. It is important to note that although youth from North Carolina experienced the lowest growth in mean monthly income, they earned more at age 18 than youth from either California or Minnesota. Other youth also increase their earnings over time. The curve is generally steeper for low-income youth and much steeper for youth nationally (See Tables A7–A9).

Table 3. Comparing Youth Who Age Out to Low-Income Youth on Earnings at Age 24

	Mean Monthly Earnings at Age 24
Model Type	
	OLS
Low-Income (age out is the reference group)	
CA	11% higher earnings***
MN	17% higher earnings**
NC	NS

Sample Size: CA: 46,094; MN: 4,915; NC: 2,993.
Notes: Age 24 is defined as three quarters prior to 24th birthday and quarter of 24th birthday.
Significance: * significance at the 10% level; **significance at the 5 percent level; ***significance at the 1% level
Models: adjust for the following factors: female, African American, other race/ethnicity (non-white) (MN & NC only), Native American (CA only), Asian (CA only), Hispanic (CA only), prior employment, rural (MN & NC only), Los Angeles (CA only), and unemployment rate at age 24.

Figure 2. Mean Monthly Earnings for Youth at Each Age Between 16 and 24



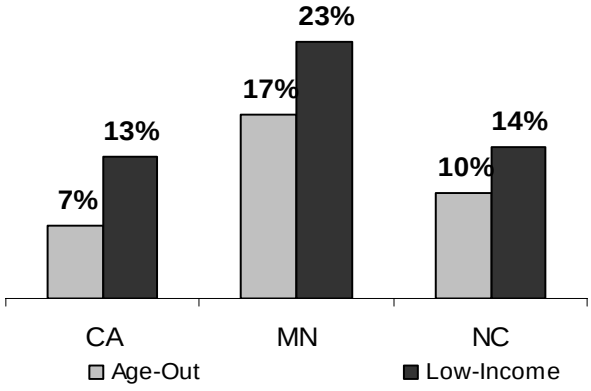
Notes: Each age is defined as the four quarters ending in the quarter with that birthday. Earnings are not adjusted for inflation.

Given their low earnings, it is not surprising that only a small portion of working youth who age out of foster care earn a livable wage at age 24[6] (7 percent in California, 17 percent in Minnesota, and 10 percent in North Carolina) (see Figure 3). Compared to other youth, far more working youth from low-income families in each state earn a livable wage: 13 percent in California, 23 percent in Minnesota, and 14 percent North Carolina.

Portions of working youth who age out of foster care and those from low-income families earning a livable wage generally increase with time in all three states. The increase is somewhat more substantial, however, for youth from low-income families (See Tables A7–A9).

Despite their low earnings, few working youth who age out of foster care receive benefits from TANF. In Minnesota and North Carolina, the states for which these data are available, only 2 percent and 7 percent, respectively, of youth who age out receive TANF at age 24 (see Figure 4). More youth from low-income families in each state receive TANF: 16 percent in Minnesota and 10 percent in North Carolina.

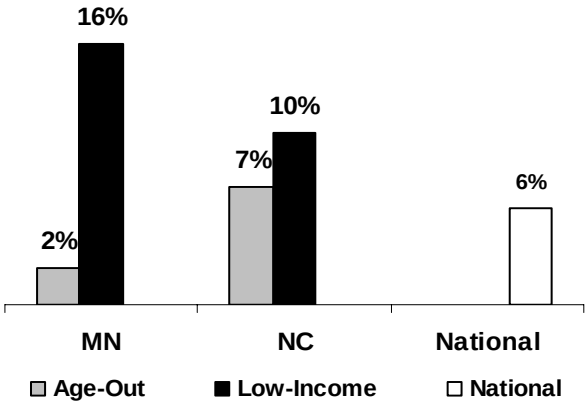
Figure 3. Percent of Youth Earning a Livable Wage, Age 24



Notes: Age 24 is defined as three quarters prior to 24th birthday and quarter of 24th birthday.

[6]This study defines a living wage using the Department of Housing and Urban Development's (HUD) annual fair market rent (FMR) as a market-based, local, cost of living threshold. The FMR-based cost of living threshold for county i in year t is equal to (10/3) x (FMR_{it}). This is the income level at which 30 percent of earnings will be spent on rent if that rent is at HUD's reported FMR level. For context, the minimum wage in California increased from $5.15 to $5.75 on March 1, 1998, to $6.25 on January 1, 2001, and to $6.75 on January 1, 2002. In Minnesota, the minimum wage increased from $5.15 to $6.15 for large employers, and $5.25 for small employers in August 2005. In North Carolina, the minimum wage increased from $5.15 to $6.15 on January 1, 2007.

Figure 4. Percent of Youth Receiving TANF at Age 24



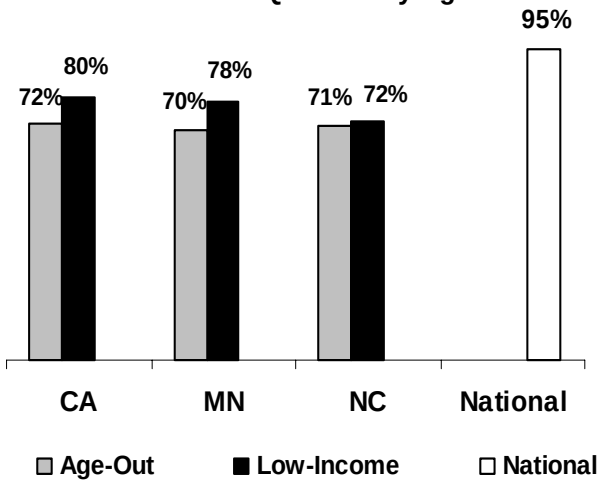
Notes: Age 24 is defined as three quarters prior to 24th birthday and quarter of 24th birthday.

This finding is consistent with Dworsky and Courtney (2000) who find that 2 percent of former foster youth in Wisconsin received AFDC two years after exiting from care. Looking out one to three years further, they find that about 12 percent of these youth receive TANF assistance. Given that these youth have such low earnings, it might be expected these rates would be higher. These youth, however, may not know how to access the benefits or might not have children.

Working Youth Who Age Out of Foster Care Continue to Experience Unstable Employment at Age 24

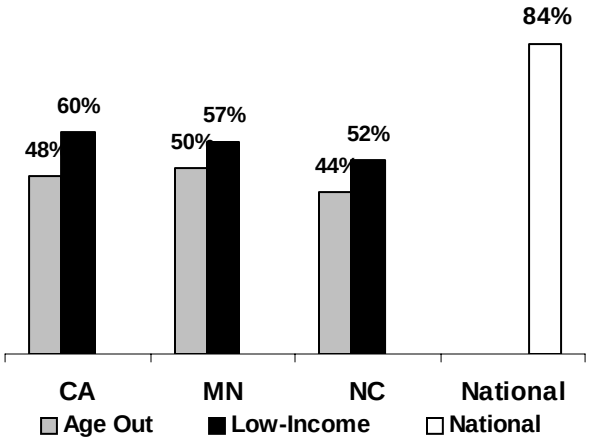
One way to look at stability of employment is to estimate the portion of youth who report employment for four consecutive quarters. The limitation of this measure is that youth may have worked for one day, week, or month of each quarter, rather than throughout the period. At minimum, this measure provides a sense of how frequently youth had regular, even if not entirely stable earnings. With this measure, about 7 out of 10 working youth who age out of foster care experience four consecutive quarters of employment at some time between ages 18 and 24 in all three states (72 percent in California, 70 percent in Minnesota, and 71 percent in North Carolina) (see Figure 5).

Figure 5. Youth Employed Four Consecutive Quarters by Age 24



Notes: Age 24 is defined as three quarters prior to 24th birthday and quarter of 24th birthday.

Figure 6. Percent of Quarters Employed by Youth at Age 24



Notes: Age 24 is defined as three quarters prior to 24th birthday and quarter of 24th birthday.

Other youth, however, are more likely to have been employed four consecutive quarters by age 24. Nationally, 95 percent of youth fall into this category. For youth from low-income families, portions are slightly higher than youth who age out in all three states (80 percent in California, 78 percent in Minnesota, and 72 percent in North Carolina).

These differences persist in all three states even when controlling for other factors like gender, race and ethnicity, prior work experience, unemployment rates, and urbanicity. After controlling for these factors, working youth from low-income families are more likely than youth who age out of foster care to have experienced four consecutive quarters of employment by age 24 in all three states (41 percent higher in California, 45 percent higher in Minnesota, and 18 percent higher in North Carolina) (see Table 4, Tables A13–A15 in the Appendix).

Another way to look at stability is to consider how many quarters in a year youth work. At age 24, youth who age out of foster care in all three study states work about half the quarters (see Figure 6). Working youth who age out of foster care in California work on average 48 percent of the quarters at age 24. Similarly, these youth in Minnesota work 50 percent of the quarters, and youth in North Carolina work 44 percent of the quarters. Youth nationally work far more often. They work 84 percent of the quarters at age 24. Generally, youth from low-income families in each of the three states also work slightly more quarters than youth who age out of foster care.

Table 4. Comparing Age-Out to Low-Income Youth on Four Consecutive Quarters Employed by Age 24

	Relative Likelihood of Being Employed Four Consecutive Quarters by Age 24
Model Type	
	Hazard
Low-Income (age out is the reference group)	
CA	41% higher likelihood***
MN	45% higher likelihood***
NC	18% higher likelihood**

Sample Size: CA: 47,685; MN: 5,247; NC: 3,252. Sample includes non-employed as well.
Notes: Age 24 is defined as three quarters prior to 24th birthday and quarter of 24th birthday.
Significance: * significance at the 10% level; ** significance at the 5 percent level; *** significance at the 1% level
Models: also adjust for the following factors: Female, African American, Other Race/Ethnicity (Non-White) (MN & NC only), Native American (CA only), Asian (CA only), Hispanic (CA only), rural (MN & NC only), Los Angeles (CA only), and county unemployment rate at Age 24.

Section 4: Employment Trajectories of Youth Who Age Out of Foster Care

Looking at youth who age out of foster care in the aggregate masks the possibility that distinct groups of youth exhibit different patterns of connection to the workforce. This study uses group-based trajectory analysis to identify and differentiate patterns of "connectedness" to the workforce for youth who age out of foster care, through age 24. Trajectory analysis is a method that employs maximum likelihood estimation techniques to identify group patterns in longitudinal data as an alternative to calculating means from the entire sample, or making subjective group delineations.

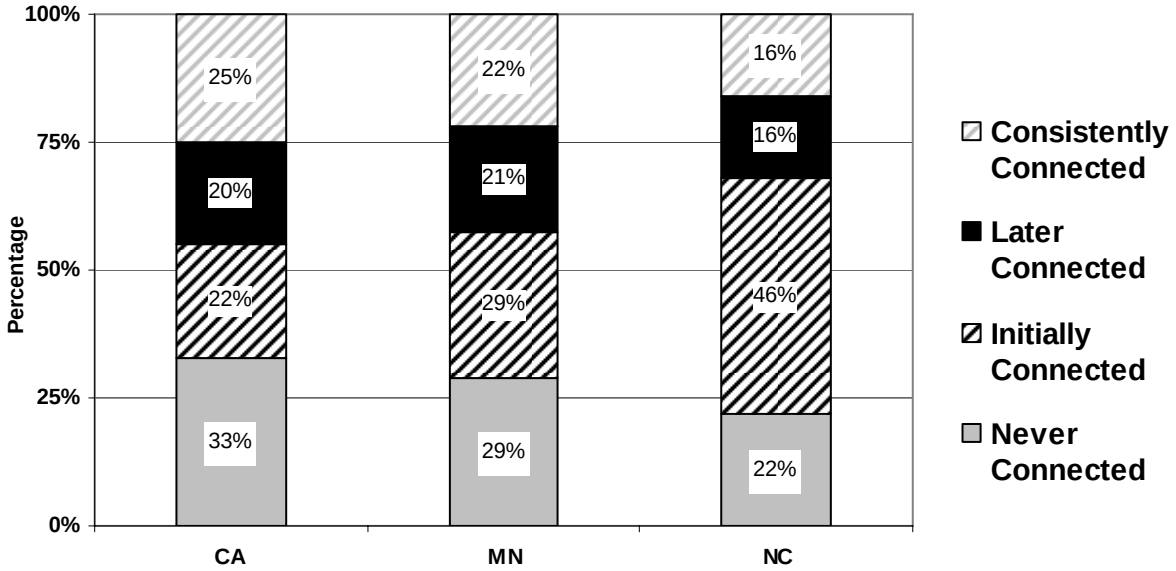
Findings are very consistent across the three states in suggesting that youth who age out of foster care follow one of four distinct paths of connecting to the workforce as they transition into adulthood. These trajectories include all youth who age out of foster care, not just those who work at some point between ages 18 and 24. Analysis begins at age 16, to illustrate how employment prior to adulthood might be related to later employment for each trajectory. Four trajectories are identified:

- ***Never Connected:*** These are youth who are never or minimally connected to the workforce between the ages of 16 and 24. They represent as many as one-third of youth (33 percent) that age out in California, over a quarter of youth (29 percent) in Minnesota, and over one-fifth of youth (22 percent) in North Carolina (see Figure 7). It is important to note that some of these youth may be working, but in jobs not covered by UI data. They also might have moved to a different state and could be working there, could be in school, or could be incarcerated.

- ***Consistently Connected:*** These are youth who show consistent connections to the workforce as adults. This group represents a quarter of youth (25 percent) in California, just over one-fifth of youth (22 percent) in Minnesota, and about one-sixth of youth in North Carolina (16 percent)

- ***Initially Connected:*** These are youth who are connected to the labor market initially (i.e., in their late teens) but with time their probability of employment drops off. This group represents one-fifth of youth (22 percent) in California, 29 percent of youth in Minnesota, and almost half of youth in North Carolina (46 percent). In North Carolina, this

Figure 7. Trajectory Groups, by State



group is composed of two subgroups, one with higher initial probabilities of employment (18 percent) and one with lower initial probabilities (28 percent).[7]

- ***Later Connected:*** These youth are not connected to the labor market initially but do begin working in their early twenties, perhaps because they were in school or in a training or apprenticeship program during their late teens. They also may have had earlier employment not covered in UI data but obtained employment with reported earnings later. This group represents one-fifth of youth in California (20 percent) and in Minnesota (21 percent), and about one-sixth of youth in North Carolina (16 percent).

It is striking that similar trajectories emerge in all three states, providing confidence that these patterns may be similar among youth who age out of foster care in other states or even nationally (see Figures 8–10). It is also notable that similar portions of youth follow each pattern. By age 24, one-third to almost half of youth who age out in all three states have high rates of employment (i.e., the consistent and later connectors). It is important to note, however, that despite their effort to work, the earnings for the later connectors to the workforce are still very low. At the same time, one-half to two-thirds of youth who age out of foster care are not connected to the workforce by age 24 (i.e., the never and initial connectors). These youth are either never connected to the labor market or are connected initially and then drop off.

While the patterns are similar overall, it is important to point out the few distinctions across the states. One distinction is seen in Minnesota where the later connectors exhibit a slight decline in their probability of employment at age 24 while the initial connectors who drop off show a rise in their probabilities of employment at this time. This pattern is not generally observed in the other states.

Another distinction is seen in the later connector group. In California and North Carolina, their progress is more linear, while in Minnesota progress is more curvilinear with significant increases beginning around ages 18 and 19. It should also be noted that this group in Minnesota never reaches a probability of employment above 60 percent, whereas these youth in California and North Carolina reach probabilities around 70 to 80 percent, respectively.

Finally, as noted previously, in North Carolina there are two distinct groups of initial connectors, one with a high probability of initial employment nearing 80 percent and the other with initial probabilities of employment around 40 percent. Both groups, however, experience a drop in employment and have probabilities of employment around 20 percent by age 24.

In the pages that follow, the employment patterns of these four trajectories are described in greater detail. It should be noted, however, that sample sizes for these trajectory groups do get small, particularly in North Carolina and Minnesota. The trajectory lines of the probabilities of employment for these groups, however, are still distinct even after taking into account confidence intervals. A few other estimates of employment patterns are highlighted, but should be interpreted with caution due to small sample sizes. Estimates of case history and demographic characteristics are not highlighted in the text, but are included in the Appendix, with sample sizes and standard deviations noted.

[7] In North Carolina a 5-group trajectory solution was used rather than a 4-group solution. This solution appeared to be a better fit with North Carolina's data. The classification of the five groups was similar to the other states, however, in that two of North Carolina's five groups exhibited the *initially connected* pattern.

Figure 8. California Trajectories: Probability of Employment by Age

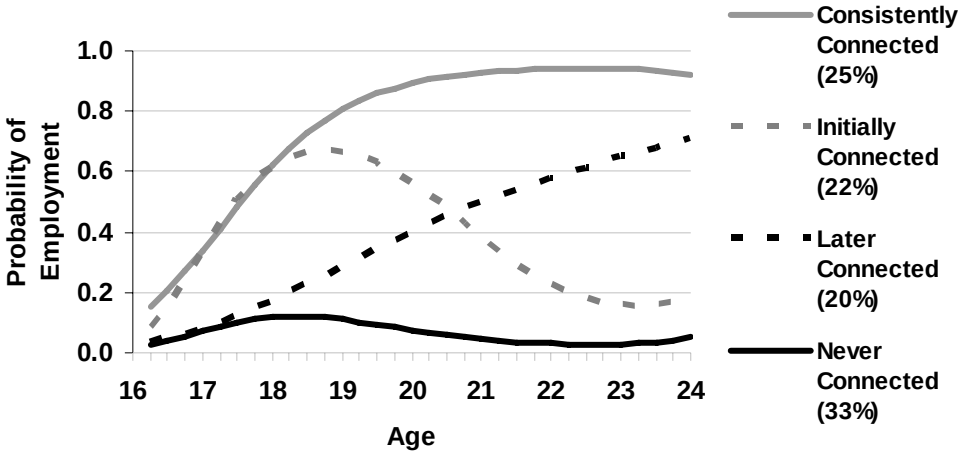


Figure 9. Minnesota Trajectories: Probability of Employment by Age

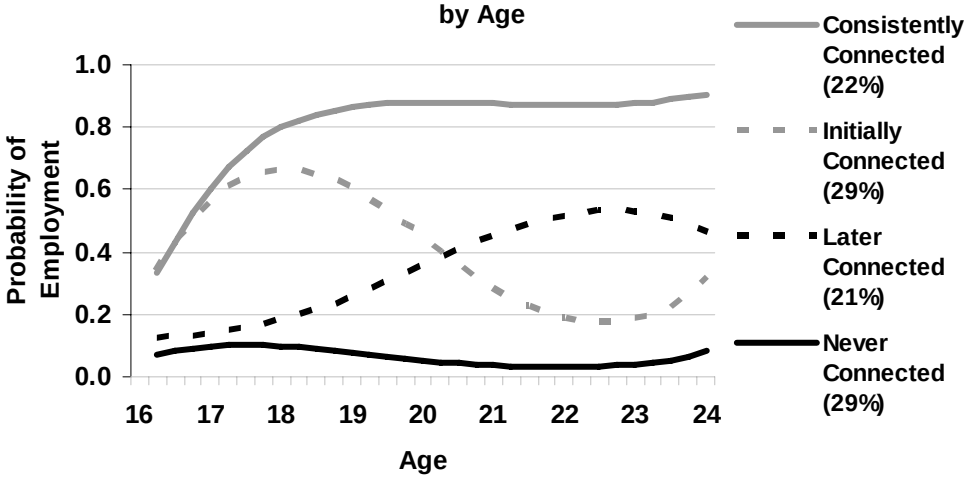
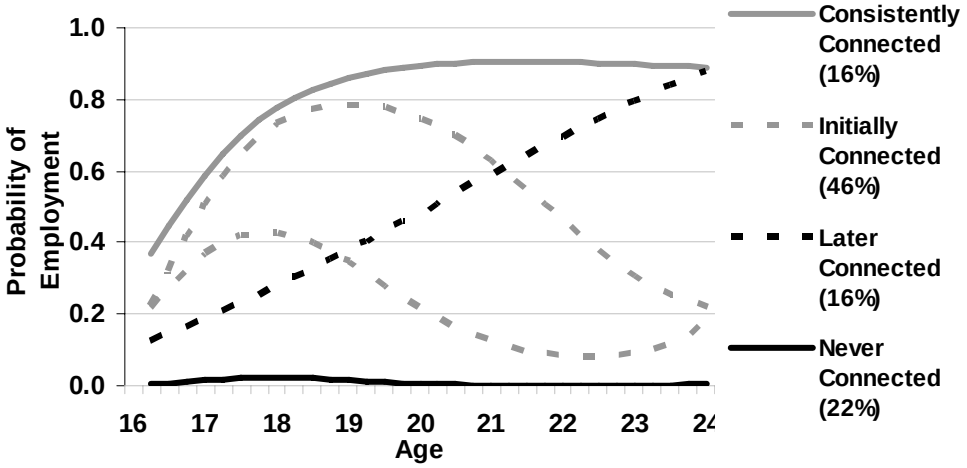


Figure 10. North Carolina Trajectories: Probability of Employment by Age



Trajectory 1: Never Connected

Of significant concern are the youth who age out of foster care and simply never connect to the workforce. They exhibit very low probabilities of employment and hardly any earnings between the ages of 16 and 24. The probability of employment for this group hovers between zero and 10 percent throughout this period. Even prior to adulthood, these youth have very low probabilities of employment (see Figure 11). This group includes the non-workers identified in the section 3 (15 percent of youth in California, 13 percent in Minnesota, and 18 percent in North Carolina) as well as those who work, but have very minimal employment. In California, 33 percent of youth are never connected, with 22

Figure 11. Never Connected Youth Trajectories by State: Probability of Employment by Age

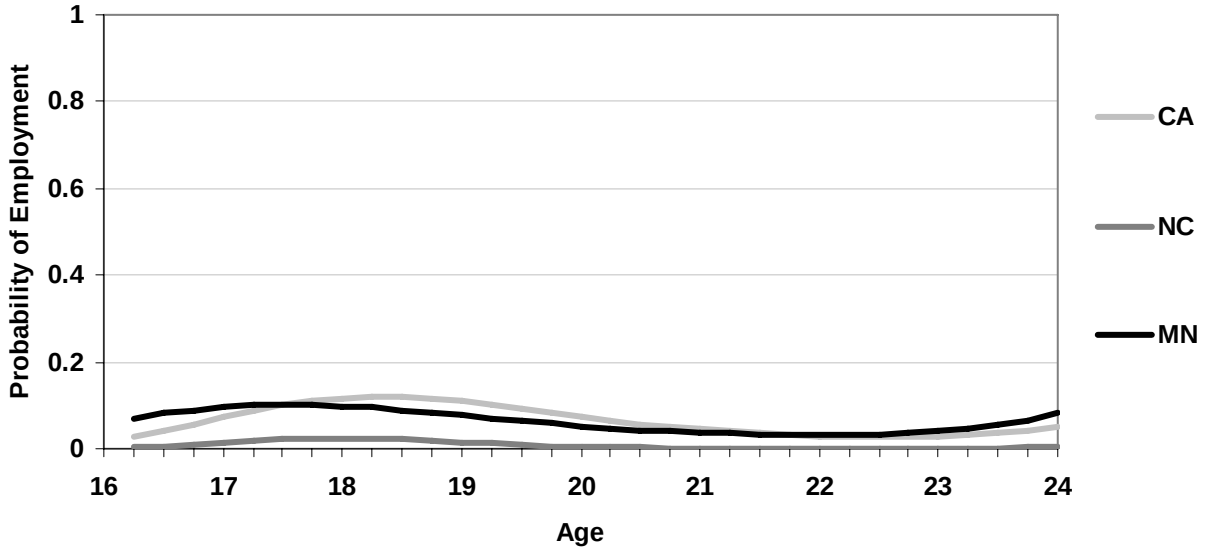
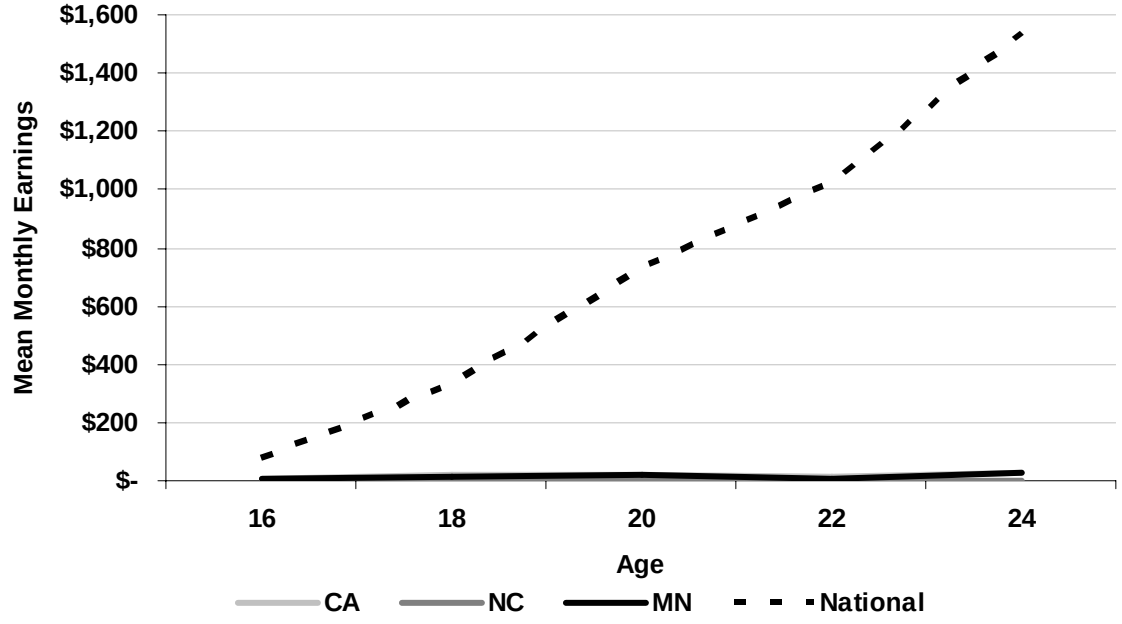


Figure 12. Never Connected Youth: Mean Monthly Earnings



percent and 29 percent never connected in North Carolina and Minnesota, respectively.

The individual economic circumstances of these youth are poor (see Figure 12). They earn little to nothing each month and this is a steady pattern from ages 16 through 24. Average monthly earnings after age 18 for this group in California reach a high of $29 at age 19 and then drop to a low of $9 at age 23. Similarly, in Minnesota the highest average monthly earnings are $27 at age 24 and the lowest are $5 at age 22. In North Carolina the highest average monthly earnings are $5 at age 18 and the lowest are zero earnings at ages 22 and 23.

It is important to note, however, that some of these youth may be working in jobs not covered by UI data (such as the military), incarcerated, enrolled in school, or working in another state. Future research, perhaps with the data collected by state for the Chafee National Youth in Transition Database (NYTD), can distinguish what portion of this group is truly never connected.

For those who are never connected, developing methods for identifying them, where they are, and how they are surviving will be vital to future policy and practice efforts. Specifically, researchers might examine to what extent these youth are homeless, disabled, or involved with the criminal justice system.

Trajectory 2: Consistently Connected

This trajectory is characterized by relatively high probabilities of employment after age 18 with earnings close to the national average in all three states (see Figure 14). The probability of employment for this group is close to 90 percent in all three states by age 20 and remains that high through age 24. It seems that connections to the workforce begin prior to adulthood for this group, as their probability of employment increases rapidly between ages 16 and 18 in all three states. Consistently connected youth include 25 percent of youth in California, 22 percent in Minnesota, and 16 percent in North Carolina.

Figure 13. Consistently Connected Youth Trajectories by State: Probability of Employment by Age

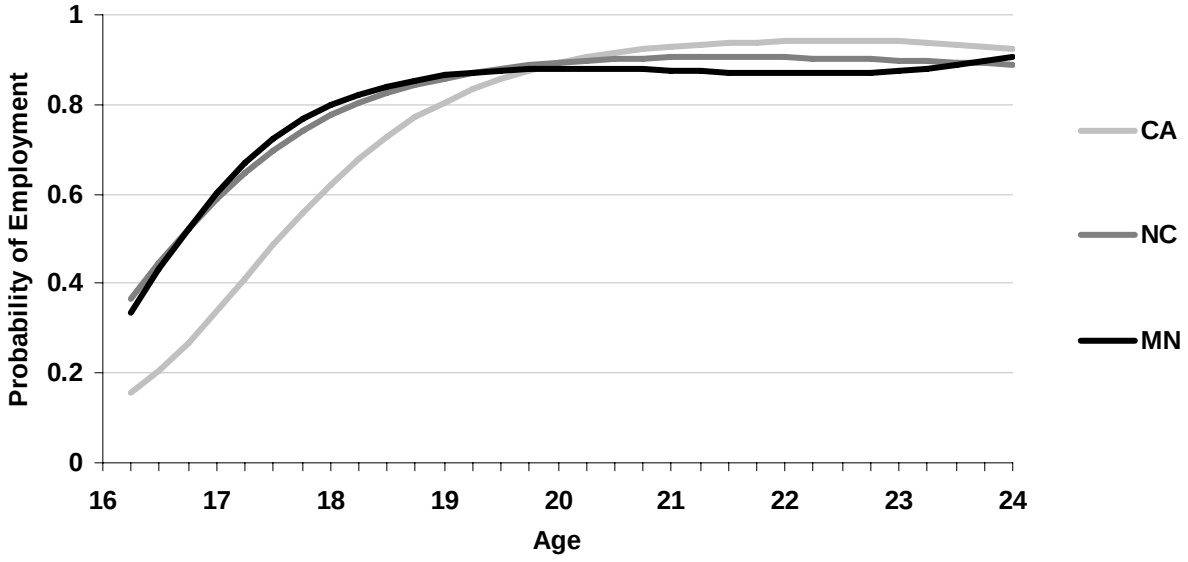
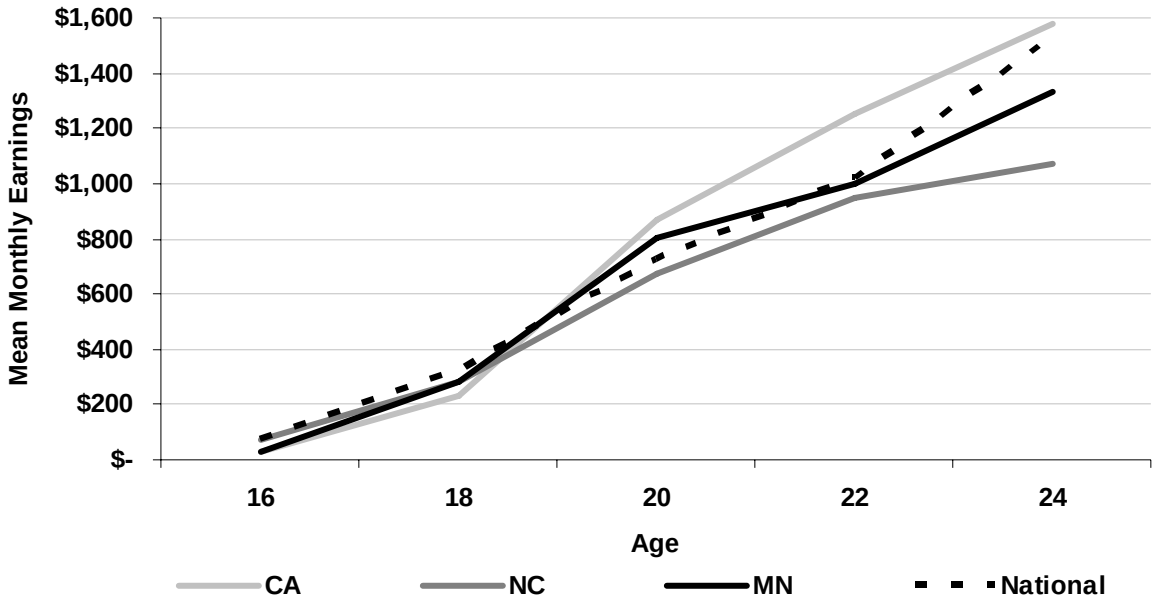


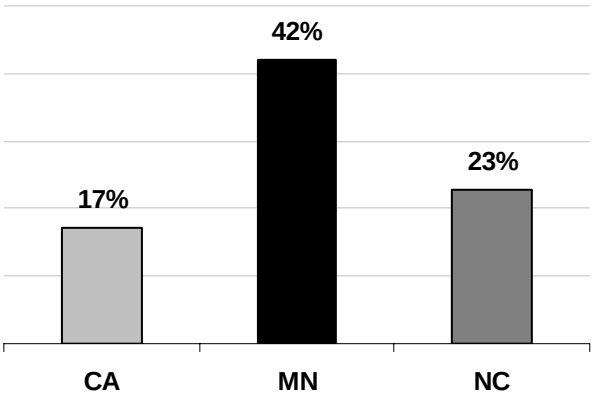
Figure 14. Consistently Connected Youth: Mean Monthly Earnings by Age



What is most encouraging about this group is that their earnings are comparable to other youth nationally. At age 24, earnings for this group in California reach $1,575 a month on average. In Minnesota, average earnings reach a high at age 24 when youth make $1,325 per month. In North Carolina, average earnings for this group are the highest at age 23 when they earn $1,080 per month. Nationally, youth earn on average $1,525 a month at age 24 (see Figure 14).

Most of these youth, however, still do not earn a livable wage (see Figure 15). Only 17 percent of these youth earn a living wage in California at age 24. In Minnesota, however, almost half (42 percent) of these youth earn a livable wage at age 24, perhaps due to a lower cost of living. In North Carolina 23 percent of youth fall into this category at 24.

Figure 15. Consistently Connected Youth: Percent Earning a Living Wage at 24



Trajectory 3: Initially Connected

Youth with this employment trajectory typically have higher probabilities of employment through their teens, with a drop in the probability of being employed occurring during their twenties (see Figure 16). In very early adulthood, around ages 18 and 19, these youth have initial probabilities of employment ranging from around 40 percent for North Carolina's low group to just over 80 percent for their high group. Percentages in California and Minnesota fall in between. By age 24, however, these probabilities hover around 20 to 30 percent in all three states. This drop may be the result of not working, returning to school, joining the military, or experiencing a major life event, job loss, or incarceration that causes them to disconnect from

Figure 16. Initially Connected Youth Trajectories by State: Probability of Employment by Age

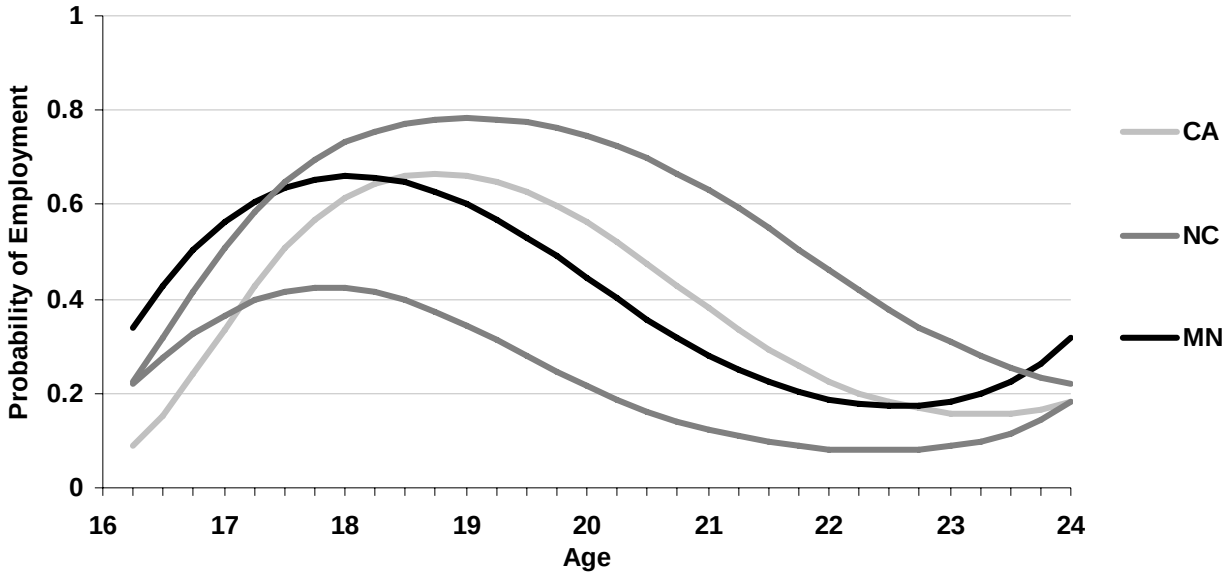
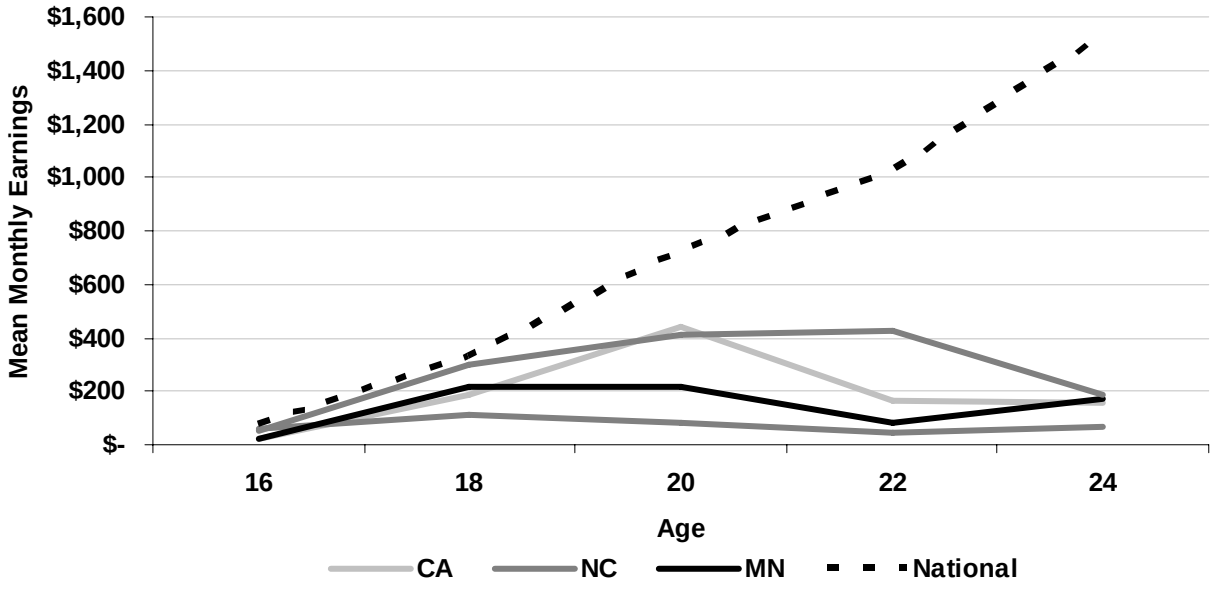


Figure 17. Initially Connected Youth Mean Monthly Earnings



the workforce. Some of these youth may move to other states or start jobs not covered in UI data. Nationally, from 2005 to 2006, 5 percent of adults ages 20 to 24 moved out of state (U.S. Census Bureau, 2007). This may be especially true for North Carolina's high group, who appear strongly connected to the workforce between ages 18 and 21. The initial connectors appear to connect to the workforce prior to adulthood, as the probability of employment increases rapidly between ages 16 and 18 for these youth in all three states. In North Carolina, 46 percent of all youth are initially connected youth, compared to 22 percent in California and Minnesota.

Earnings for this group reach a high between the ages of 18 and 21 and then decrease substantially. Even at their peak, however, these youth earn very little. In California, these youth reach a high in average earnings at age 20 when they earn $450 a month. In Minnesota, highest average earnings occur for these youth at age 19 when they earn $250 a month. In North Carolina, highest average earnings are realized for the high group at age 21, and are $475 a month (see Figure 17). The relatively low earnings of this group might explain the drop off in employment if this creates a disincentive to continue working.

Few to none of these youth earn a living wage at any point during this period. In California, just 1 percent of these youth earn a living wage at age 24. None of North Carolina's low group is earning a livable wage at age 24. Sample sizes in Minnesota and North Carolina's high group are too small to report.

Trajectory 4: Later Connected

Youth in this trajectory have lower probabilities of employment until their early twenties but then see a steady increase in their probability of employment through age 24 (see Figure 18). In early adulthood their probabilities of employment are around or below 40 percent. Then in their twenties, these youth increase their probability of employment to highs above 70 percent in California and North Carolina and around 50 percent in Minnesota. In California, 20 percent of youth are later connected youth, compared with 21 percent in Minnesota and 16 percent in North Carolina.

Earnings start to increase for these youth through their twenties as well (see Figure 19).

Figure 18. Later Connected Youth Trajectories by State: Probability of Employment by Age

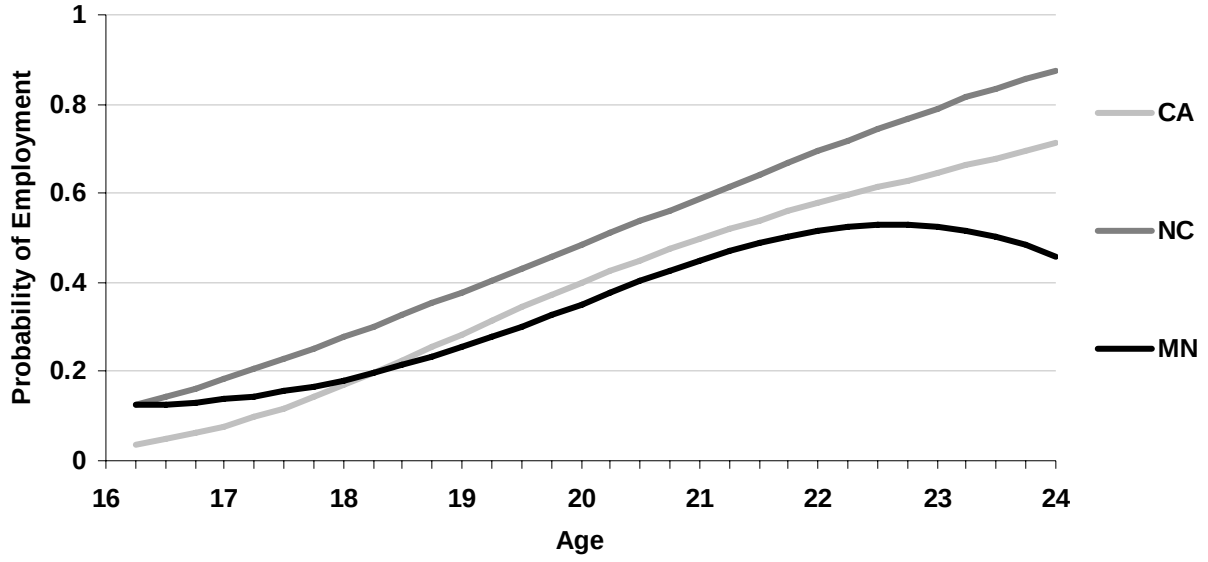
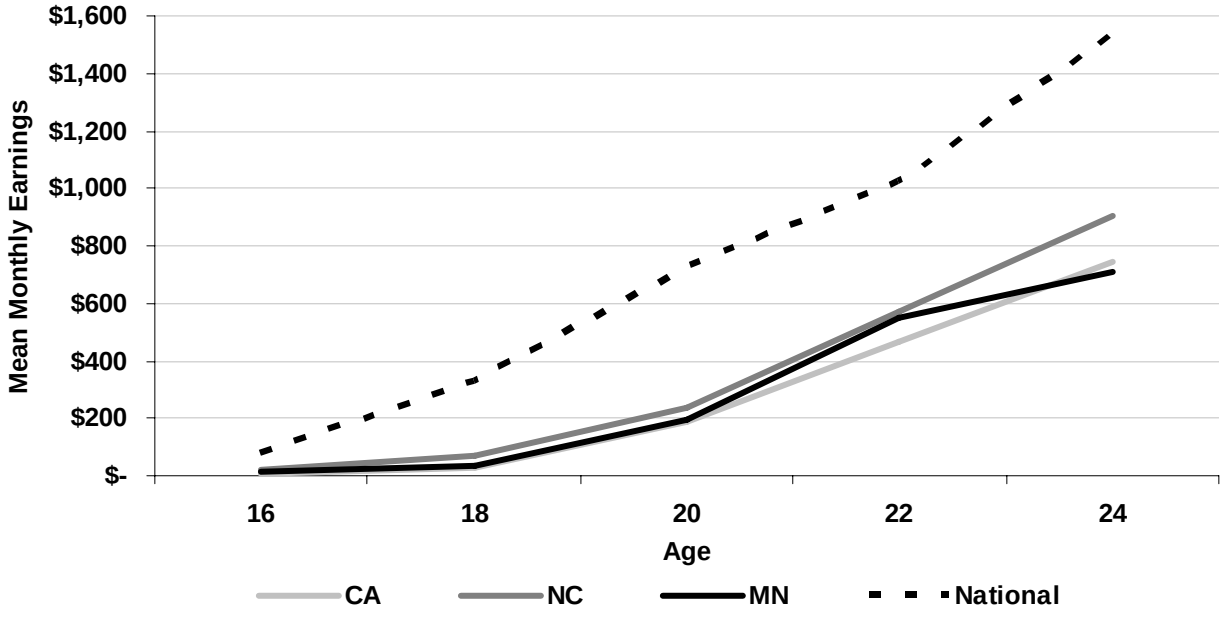


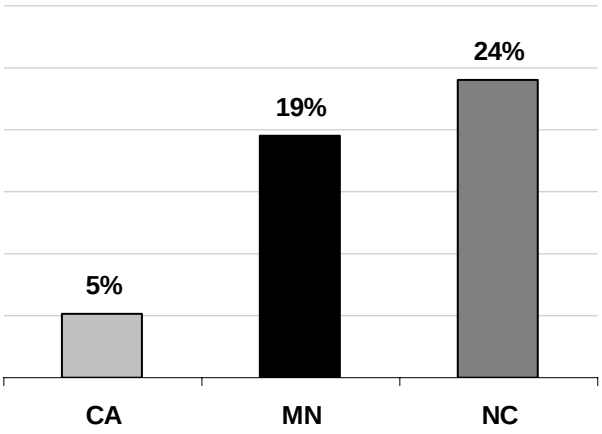
Figure 19. Later Connected Youth: Mean Monthly Earnings by Age



Youth in California reach a high in average earnings at age 24 when they earn $750 a month. In Minnesota, highest average earnings occur for these youth at age 24 when they earn $700 a month. In North Carolina, highest average earnings are realized at age 24 when these youth earn $905 a month. Overall, these youth do not earn as much as the consistently connected youth at 24 but do exhibit a fairly steady rise in earnings in their twenties.

Most of these youth are not earning a livable wage at age 24 (see Figure 20). Only 5 percent of these youth earn a livable wage in California at age 24, perhaps due to a higher cost of living. In Minnesota, 19 percent of youth falls into this category. About a quarter (24 percent) of the later connectors in North Carolina earn a livable wage at age 24.

Figure 20. Later Connected Youth: Percent Earning a Livable Wage at 24



Section 5: The Role of Child Welfare Factors

This section focuses on the relationship between child welfare factors (i.e., age at exit, placement type, type of maltreatment, and time in care) and employment outcomes among youth who age out of foster care. Ordinary least squares regression, logistic regression, and Cox proportional hazard models were used to examine whether child welfare factors contribute significantly to employment, earnings, and employment stability outcomes (see Table 5).

Age at Exit: Youth who age out of foster care later are more likely to achieve four quarters of consecutive earnings

On the whole, a youth's age at exit is not significantly associated with employment and total earnings but has some relationship to stability. In Minnesota and North Carolina, youth who do not age out of foster care until they are one year older have greater odds of achieving four consecutive quarters of employment. That is, those who age out of foster care at 19 are more likely to achieve four consecutive quarters than those who age out of foster care at 18, who in turn are more likely than those aging out of foster care at 17. In Minnesota, aging out of foster care one year later is associated with a 22 percent increased likelihood of having four consecutive quarters of employment. In North Carolina, aging out of foster care one year later is associated with a24 percent increased likelihood. This relationship does not emerge in California.

Prior research has shown that youth who leave foster care later may have better employment outcomes (Courtney et al., 2005; Wade and Dixon, 2006). Also, youth who stay in care longer may be more likely to be in school, which might explain more "stable" or consecutive quarters of employment once they leave the system. These youth also may have received more training and employment-related skills than youth who exit foster care one year earlier, but further research is needed.

It is important to note that in 1999—the likely time that the majority of these youth exited care—youth typically remained in care only if they were disabled or in school. In North Carolina, to remain in care, youth had to be in school. Hence, it is difficult to distinguish whether some of the positive effects of aging out of care later may be due to being in school, receiving special assistance due to a disability, or staying involved with the system past age 18.

Placement Type:

1) Youth in California who lived in group homes have lower relative odds of being employed at 24

A striking and consistent pattern emerges in California, but not in Minnesota or North Carolina, with respect to youth who live in group homes or institutions before aging out of care. In California youth who had been in group homes are significantly less likely to be employed at 24 than youth in non-relative foster homes. They also are less likely to have four consecutive quarters of employment, and earn significantly less than those in non-relative foster homes. At age 24 these youth have 31 percent lower odds of employment than youth in non-relative foster homes. The odds that they are employed four consecutive quarters at 24 is 47 percent lower than youth who had been in non-relative foster homes. They also earn 14 percent less than foster youth in non-relative placements at 24.

There is some support for this finding in prior research. Goerge and colleagues (2002) find that youth in group homes are significantly less likely than youth in relative foster care to be employed two years after exiting care in Illinois. This could be due to differences in employment services and support that youth receive in group homes versus foster home settings, or differences in youth characteristics, which should be explored further in future research.

2) Employment outcomes are similar for youth in relative versus non-relative foster care

On most employment outcomes, youth in relative foster homes did not differ significantly from those who had been in non-relative homes. In all three states they are equally likely to be employed at 24 and have similar earnings. In Minnesota and North Carolina they are also equally likely to have been employed four consecutive quarters at 24. In contrast, youth in relative foster homes in California are less likely to be employed four consecutive quarters at 24 than those who had been in non-relative foster care.

3) Youth whose placement prior to exit is undetermined or unspecified have less employment and earnings in California

For some youth in all three states, placement type at exit is unspecified in the administrative data.[8] In Minnesota and North Carolina, these youth do not have significantly different employment outcomes than youth in non-relative care. In California, however, they have decreased odds of employment and are less likely to have four consecutive quarters of employment than youth in non-relative care. Additional analyses in California reveal that many youth with unspecified placement at exit may have run away (i.e., their whereabouts are unknown). Researchers examined whether the last known placement type helped explain employment outcomes for youth with no placement information at the time they exited care. Youth whose last known placement status was "run away" are significantly less likely than youth in non-relative foster care to have four consecutive quarters of earnings. The findings suggest that youth with unspecified placement information, who have likely run away, are especially at-risk of poor employment outcomes.

Maltreatment Type: In general, type of maltreatment does not explain employment outcomes

For the most part, youth who experienced physical, sexual, or other forms of abuse are not significantly different from those who experienced neglect when it comes to employment outcomes. Type of maltreatment is not significantly related to any employment outcomes in California and North Carolina. The same is true in Minnesota except with respect to sexual abuse and employment at age 24. Youth who experienced sexual abuse have decreased odds of being employed at 24 compared with youth who had been neglected. This finding stands out as the only significant relationship between maltreatment type and employment at 24 and may be worth further investigation in future research.

Time in Care: Number of placements, total months in care, and total number of episodes (i.e., number of exits and re-entries into the foster care system) are not related to employment outcomes

Neither number of placements, total months in care, nor total number of episodes is significantly related to employment outcomes in California, Minnesota, or North Carolina at age 24. Relatively few case history factors distinguish employment outcomes among youth who age out of foster care.

The next section examines whether demographic characteristics like gender, and race and ethnicity, predict employment outcomes for the youth.

[8] This may be due to several reasons, including that youth may have run away, been in a hospital, or been jail/detention. This included 17 percent of cases in California, 6 percent of cases in Minnesota, and 14 percent of cases in North Carolina.

Table 5. Role of Child Welfare and Demographic Factors in Predicting Employment Experiences Among Age-Out Youth*

	EMPLOYMENT			EARNINGS			STABILITY					
	A. Ever Employed at Age 24			B. Natural Logarithm of Mean Monthly Earnings at Age 24			C. 'Relative Risk' of Achieving 4 Consecutive Quarters of Employment by Age 24			D. Employed Four Consecutive Quarters at Age 24		
	CA	MN	NC	CA	MN	NC	CA	MN	NC	CA	MN	NC
Model Type	Logistic			OLS			Hazard			Logistic		
Sample Size	2,690	309	284	2,690	309	284	3,156	358	347	2,690	306	284
CASE HISTORY												
Age at Exit												
	NS	NS	NS	NS	NS	NS	NS	**22% more likely****	**24% more likely****	NS	NS	NS
Number of Placements												
	NS	**13% lower odds****	NS	NS	NS	NS	NS	NS	NS	**5% lower odds***	NS	NS
Placement Type (non-relative family foster care, reference)												
Foster Home, Relative	NS	NS	NS	NS	NS	NS	**14% less likely****	NS	NS	**26% lower odds****	NS	NS
Group Home/Institution	**31% lower odds *****	NS	NS	**14% lower****	NS	NS	**36% less likely*****	NS	NS	**47% Lower odds*****	NS	NS
Supervised Independent Living		NS	NS		NS	NS		NS	NS		NS	NS
Unspecified Exit	**32% lower odds *****	NS	NS	**14% lower***	NS	NS	**34% less likely*****	NS	NS	**50% lower odds*****	NS	NS
Other	NS	NS	NS	**21% lower*****	**89% lower*****	NS	NS	**53% less likely****	NS	NS	NS	NS
Type of Abuse (neglect, reference)												
Physical Abuse	NS	NS	NS	NS	NS	NS	NS	NS	NS	**31% higher odds***	NS	NS
Sexual Abuse	NS	**75% lower odds *****	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Other	NS		**49% lower odds ***	NS		NS	NS		NS	NS		NS

Notes: NS = Not Significant; * *Significance at the 10% level; ** significance at the 5% level; *** significance at the 1% level.*
*Models also adjust for the following factors: placements squared; models A, B, and D control for county unemployment rate at Age 24; and Model B controls for Number of Quarters Employed at Age 24 and Number of Quarters Employed between Ages 23 and 24.

Table 5 Continuted. Role of Child Welfare and Demographic Factors in Predicting Employment Experiences Among Age-Out Youth*

	EMPLOYMENT			EARNINGS			STABILITY					
	A. Ever Employed at Age 24			B. Natural Logarithm of Mean Monthly Earnings at Age 24			C. 'Relative Risk' of Achieving 4 Consecutive Quarters of Employment by Age 24			D. Employed Four Consecutive Quarters at Age 24		
	CA	MN	NC	CA	MN	NC	CA	MN	NC	CA	MN	NC
Total Number of Episodes												
	NS	NS	NS	NS	**84% higher***	NS	NS	NS	NS	NS	NS	NS
Months in Care												
	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
DEMOGRAPHICS												
Gender (male, reference)												
Female	NS	**71% higher odds ****	NS	NS	**38% lower*****	NS	NS	NS	**38% more likely****	NS	**60% higher odds***	**68% higher odds***
Race (white, reference)												
African American	NS	NS	NS	NS	**45% higher****	NS	**13% less likely****	NS	NS	**18% lower odds***	NS	NS
Other Race (non-white		NS	NS		NS	NS		NS	**59% more likely***		NS	NS
Native American	NS			NS			NS			NS		
Asian	NS			NS			**34% more likely****			**244% higher odds*****		
Hispanic	**20% higher odds***			NS			NS			NS		
Urbanicity (non-rural, reference)												
		134% higher odds***	NS		NS	NS		NS	NS		**72% higher odds***	NS
Los Angeles (not Los Angeles, reference)												
	36% higher odds***			NS			NS			NS		
Prior Work Experience (before age 18) (no prior work, reference)												
	42% higher odds***	NS	NS	NS	**26% higher***	NS	**78% more likely*****	**75% more likely*****	**27% more likely*****	**91% higher odds*****	NS	NS

Notes: NS = Not Significant; * *Significance at the 10% level; ** significance at the 5% level; *** significance at the 1% level.*

*Models also adjust for the following factors: placements squared; models A, B, and D control for county unemployment rate at Age 24; and Model B controls for Number of Quarters Employed at Age 24 and Number of Quarters Employed between Ages 23-24

Section 6: The Role of Demographic Factors

This section focuses on the role that factors such as gender, race and ethnicity, prior employment, and living in an urban or rural setting (i.e., urbanicity) play in predicting employment, earnings, and employment stability among youth who age out of foster care. Ordinary least squares regression, logistic regression, and Cox proportional hazard models were used to examine whether demographic factors contribute significantly to employment outcomes (see Table 5).

Gender: There is some evidence of gender differences, but not in all three states

Differences by gender are most apparent in Minnesota. Here, women have greater odds of being employed at 24 but earn significantly less than men. In North Carolina, women have a 38 percent greater likelihood of four consecutive quarters of employment than men. Similar gender differences in employment and earnings are observed in Illinois and South Carolina for youth who age out of foster care two years prior in the study by Goerge and colleagues (2002). In California, there are virtually no differences in employment outcomes by gender.

Race and Ethnicity: There are some racial and ethnic differences in employment outcomes

Racial differences in employment are seen among youth who age out of foster care. Compared to non-Hispanic white youth, African American youth show less favorable employment in California but more favorable earnings in Minnesota. In California, African Americans are significantly less likely to achieve four consecutive quarters of employment than non-Hispanic white youth. However, in Minnesota African Americans have 45 percent higher earnings at age 24 than non-Hispanic white youth. In North Carolina, no differences reach statistical significance.

In California, population size permits comparisons between Hispanic, Asian, Native American, and non-Hispanic white youth. Analyses reveal that Hispanic youth have increased odds of employment at 24 compared with non-Hispanic white youth but have no significant differences in earnings. In contrast, Asian youth do not differ significantly from non-Hispanic whites in employment and earnings but are 244 percent more likely to work four consecutive quarters at age 24.

Prior Employment: Youth with early work experience show more favorable employment at 24

In California, Minnesota, and North Carolina there is some evidence that youth with employment before age 18 have more favorable employment at 24. Youth in these states with early work experience are more likely to have four consecutive quarters of employment at 24. In California they are also likely to earn significantly more at age 24 than youth without early work experience. These findings should be interpreted with caution, however, as there may be unobserved characteristics of these youth that are correlated with both prior work and later employment. In this case, the coefficient on prior employment may be capturing the effects of these unobserved characteristics on later outcomes as well as the effects of working prior to age 18.

Urbanicity: Urbanicity has some relationship to employment in two states

Youth who had been in care in Los Angeles County were more likely to be employed at 24 than youth who had been in care in other counties in California. In contrast, youth who had been in care in rural counties in Minnesota have greater odds of being employed at 24 than youth who had been in care in other counties. In North Carolina there are no significant differences associated with having been in care in a rural versus non-rural county. These findings likely reflect regional differences in the employment opportunities in the counties examined.

Section 7: Summary

This report describes employment outcomes for youth who age out of foster care, compared with youth nationally and a similar sample of youth from low-income families. A primary goal of the study is to extend prior research that finds that youth who age out of foster care exhibit poor employment outcomes two years after discharging from care and determine whether these patterns persist for youth through their mid-twenties. Findings reveal the following picture.

Youth who age out of foster care continue to experience poor employment outcomes at age 24

At age 24, youth who age out of foster care do not fare well on a variety of employment outcomes. Compared to youth nationally and even youth from low-income families, they are less likely to be employed or employed regularly, and, not surprisingly, they earn very little. At age 24, average monthly earnings for youth who age out of foster care are $690 in California, $575 in Minnesota, and $450 in North Carolina. Employment and earnings differences between youth who age out of foster care and youth from low-income families remain even when controlling for demographic factors in two of the three states.

Youth who age out of foster care tend to follow one of four employment trajectories as they transition to adulthood

Youth who age out of foster care exhibit four distinct patterns in connecting to the workforce. In all three states these four patterns emerge consistently, despite geographic, demographic, and labor market differences in the states. This suggests that similar patterns might emerge in other states or even nationally. Overall about one-third to one-half of youth follows a path that leads to relatively positive employment outcomes by age 24. At the same time, the other half to two-thirds of these youth exhibit patterns leading to poorer outcomes at age 24.

Positive outcomes at age 24:

- *Consistently Connected*: These youth maintain relatively high probabilities of employment between the ages of 18 and 24, and their average earnings are comparable to youth nationally. This group appears to begin connecting to the workforce prior to age 18. This group represents one-sixth to one-quarter of the youth in the states (25 percent in California, 22 percent in Minnesota, and 16 percent in North Carolina).

- *Later Connected*: Youth in this group have a slow start but steadily increase their probability of employment and earnings throughout their early twenties. Their average earnings do not reach levels comparable to youth nationally, but do show an upward trend. This group does not appear connected to the workforce prior to age 18. These youth represent one-sixth to one-fifth of the youth in the states (20 percent in California, 21 percent in Minnesota, and 16 percent in North Carolina).

Poor outcomes at age 24:

- *Never Connected*: These youth have very low probabilities of employment and hardly any earnings at any time between ages 18 and 24 or prior to age 18. This group represents one-fifth to one-third of the youth in these states (33 percent in California, 29 percent in Minnesota, and 22 percent in North Carolina). However, some portion of these youth may be working in jobs not covered by UI data, incarcerated, supported by other employed persons, or have moved out of state.

- *Initially Connected*: Youth in this group begin making connections to the workforce prior to adulthood and maintain a high probability of employment through their late teens. Their probabilities of employment then decline rapidly in their early twenties. The average earnings for this group never get very high, which might explain the drop off in employment if lower earnings result in less incentive to continue working. The drop-off in employment for some portion of these youth might also be explained by changes to jobs not covered by UI data, moves out of state, incarceration, or childbearing. This group represents one-fifth to almost half of the youth in these states (22 percent in California, 29 percent in Minnesota, and 46 percent in North Carolina).

Work prior to age 18 is associated with better outcomes at age 24, but individual or family characteristics may be playing a role

Working prior to age 18 is strongly associated with better employment outcomes at age 24. It is not possible to distinguish to what extent prior employment might be a proxy for characteristics of the family or the youth that cannot be controlled for in this analysis. Specifically, helping youth connect to the workforce prior to age 18 might not lead to better outcomes at age 24 if it is really family characteristics that affect prior work and also later outcomes. This finding therefore should be interpreted with caution. Looking at the four employment trajectories suggests that employment prior to age 18 also is no guarantee of positive or negative employment outcomes at age 24. For example, the initial connectors increase their probabilities of employment prior to age 18, but then their probabilities drop sharply by age 24. Their average earnings never increase substantially, however, which may suggest that prior work is most beneficial when it helps youth connect to better-paying jobs. At the same time, the later connectors have low probabilities of employment prior to age 18 but substantially increase their probability of employment by age 24.

Case history factors do not play a significant role in influencing employment outcomes

Youth who age out of foster care do not fare well on employment outcomes regardless of how long they were in foster care, the number of placements they experienced, or the number of times they came into care. The factor that does appear to play a role in California is placement in group homes or institutions prior to exiting care. Youth placed in these settings prior to exit fare worse than youth in non-relative foster homes prior to exit on many of the employment outcomes. More research is needed to distinguish whether it is placement in these settings that contributes to poor outcomes or characteristics of youth placed in them that are associated with worse outcomes.

Section 8: Implications

Key findings suggest that youth who age out of foster care do not fare well at age 24 compared to their peers. Groups of youth who age out of foster care, however, follow different patterns in connecting to the labor force. Some exhibit steady connections to the workforce (*consistently connected)*, and some never connect (*never connected*). Some connect initially but then see declines in employment (*initially connected*). Others get off to a slow start but connect to the workforce later (*later connected*). These findings suggest several potential implications for policy and future research.

Pathways to adult services

Extending services to age 21 is the focus of many recent initiatives and efforts to support youth aging out of foster care. Specifically, the FCIA allowed states to assist youth ages 18 to 21 who may have left foster care, and to extend Medicaid coverage for foster care youth to age 21. Many, but not all, states provide the FCIA independent living services to youth through age 21. Seventeen states have used the FCIA option to extend medical coverage to this group of youth, and another five states considered the option in 2007 legislative sessions. A large number of states (28) and the District of Columbia use other methods to extend Medicaid coverage to this population (Gever, 2007).

Findings from this report would suggest that risk for these youth extend beyond emancipation or even age 21. Working at age 21 does not appear to be a guarantee that youth will sustain employment through age 24. In fact, significant changes in employment trajectories appear to occur for foster youth who age out right around age 21. For example, the *initially connected* youth join the workforce prior to adulthood, sustain employment in their late teens, but by age 22, their probabilities of employment have substantially declined. Practitioners serving these youth in their late teens and early twenties might think these youth have successfully connected to the workforce, when in fact they may have difficulty sustaining their employment. It also might not be possible to fully detect the *never connected* youth until age 22 or 23 when a clear pattern of little to no employment has been established.

Some portion of these youth may need additional assistance staying connected to the labor market or accessing adult service systems. Policymakers might consider strategies for serving young adults. For example, legislation to reauthorize the Workforce Investment Act (WIA) passed by the United States House of Representatives in 2005 changed the defined age for youth services from 16 to 21 to 16 to 24 to better reflect the age of transition for young adults. As Chafee programs move into their second decade, policymakers and practitioners might consider ways to use these programs to help identify youth who may need services beyond age 21, such as the *never connected* and *initially connected* youth.

Importance of ages 16 to 18

Ages 16 to 18 are a period of significant employment activity for many youth aging out of foster care. Rapid increases in employment occur for *consistently connected* youth and *initially connected* youth between the ages of 16 and 18. Similarly, results show that employment prior to age 18 is associated with positive employment outcomes at age 24 for youth in California, Minnesota, and North Carolina, although it is important to note this estimate may be capturing the effects of unobserved individual and family characteristics as well. However, the results do suggest that helping youth connect to the workforce prior to adulthood may have benefits later.

Assisting them in accessing well-paying jobs and jobs with promising career paths might also be critical. Specifically, one hypothesis for why the *initially connected* youth do not sustain employment might be their low earnings. Youth who earn very little may not have an incentive to stay connected to the workforce. Job training, apprenticeships, and vocational education programs for youth in their late teens might be critical to helping these youth find better paying jobs. WIA-funded employment programs, such as Job Corps and Title I-B Youth Services, might target former foster youth who are able to work but have difficulty connecting to well-paying jobs. The 2005 WIA reauthorization legislation described above prioritized services for current and former foster youth.

Tailoring programs

It is not surprising that different service approaches might be needed for different youth. This study suggests that there are likely four paths youth who age out of foster care will follow. As programs to serve former foster youth continue to evolve, policymakers and practitioners may want to consider strategies for tailoring programs to best meet the needs of youth on these different trajectories. For example, three of the four trajectories suggest the need for specific types of interventions:

- *Never Connected:* A significant challenge in serving this group is finding them. It is difficult to know if they are homeless, disabled, incarcerated, or living with their biological parents or extended family. Another challenge is figuring out how to help them access appropriate services. Youth with disabilities may benefit from assistance applying for Supplemental Security Income. Youth living with their families may need guidance to access programs that provide job training and housing, like Job Corps, to help them become self-sufficient. The Chafee NYTD could be an important tool to help states identify the types of youth that exhibit minimal connections to the workforce and determine which services they need.

- *Initially Connected:* This group may benefit from programs that help them connect to well-paying jobs that lead to self-sufficiency. This group exhibits a desire to work early on, but these youth may need additional training or education to find long-term and sustaining employment. In addition, to the extent practitioners can detect major life events, job losses, or involvement in criminal activity that may cause a youth to disconnect from the workforce, interventions might be put in place to help this group stay on a more positive trajectory. The connection that these youth initially had to the workforce may also be broken as a result of family formation. For these new parents, improved child care options may help youth who want to stay employed do so without compromising the healthy development of their children. Again, the Chafee NYTD could provide important information about the types of events that divert these youth and what services might help keep them on a positive path.

- *Later Connected:* These youth may require supports during the years that they are in school or receiving training in their preparation to later connect to the workforce. Youth who age out of foster care typically do not have the family supports their peers may enjoy during this period in their lives. To ensure these youth stay in school may require that they receive multiple supports during this period, including housing, food, clothing, transportation, and a stipend for other living expenses.

Future research

This study uses administrative data to provide a first look at employment outcomes through age 24 for youth who have aged out of foster care in three states. Additional research in several areas could continue to build on and expand these results.

- *Youth Served by Chafee Programs:* The cohort of youth in this study was 17 in 1998 and likely aged out of care at age 18 in 1999. The FCIA that included the John H. Chafee Foster Care Independence Program (CFCIP) was enacted in 1999. While these programs would have been in their infancy at the time these youth aged out of foster care, the youth studied here may have been served by earlier generations of independent living programs. In the future, researchers may want to examine later cohorts of these youth that may have benefited from the CFCIP programs. With each additional year of employment data, another cohort of youth can be assessed through age 24. For example, with 2006 employment data, youth who age out in 2000 can be assessed through age 24. Another approach might be to compare youth who aged out in 1998 prior to CFCIP and youth who aged out in 2002 who would have experienced CFCIP to see how they fare at age 22. This type of approach was used by researchers in a study of youth aging out of foster care in Utah (Singer, 2006).

- *Education and Other Services:* Additional research could be done on the role of education and other service systems in supporting these youth. Education, in particular, is

likely to have a significant effect on later success in the workforce and earnings potential. Knowing whether these youth enroll in school, when, for how long, and whether they obtain a degree would provide a major missing link to this story. Similarly, this study was able to look at TANF receipt for these youth, but these youth could have received other services like SSI, Social Security, Food Stamps, or other workforce development services. Understanding the full range of service receipt for this population is essential to understanding how these youth survive with such low earnings. Finally, additional research could help discern how often these youth become involved in the criminal justice system. Incarceration will affect youth employment and future earning potential.

- *Increased Understanding of the Trajectories*: Much more exploration could be done to understand the different employment paths these youth follow after aging out of foster care. Specifically, researchers might explore what factors are associated with youth taking a particular path. For example, what are the resiliency factors that enable youth to age out of foster care and connect consistently to the workforce? This group could provide valuable clues about what helps youth aging out of foster care succeed. It will also be important to know more about what risk factors are associated with less encouraging outcomes for these youth. For example, what factors make it particularly difficult for some youth to connect? Or what factors or events derail youth who might otherwise have stayed consistently connected? In the future, researchers might also seek to better understand the heterogeneity within each trajectory, as was observed for the initial connectors group in North Carolina. The two groups within this trajectory may benefit from different service responses. This additional information and answers to these questions would assist policymakers and practitioners in tailoring services to meet the varying needs of youth aging out of foster care as they come of age and begin their journey through adulthood.

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Technical Appendix

This study employed multiple data sources to assess employment outcomes for youth between the ages of 16 and 24 who age out of foster care in three states: California, Minnesota, and North Carolina. The analysis also employed comparison groups of youth from low-income families and youth nationally. The primary sources of data for the study were administrative child welfare, public assistance, and Unemployment Insurance (UI) records. The study also used the National Longitudinal Survey of Youth 1997 to produce national estimates for comparison. Several analysis methods were employed including descriptive bivariate analyses, multivariate models, and trajectory analyses. Below the sources of data, sample and variable creation, and analysis methods are described in greater detail.

Data

The primary sources of data for this study were administrative child welfare, public assistance, and UI records. The study also employed survey data from the NLSY97. Some additional supplemental data on fair market rents and unemployment rates were also incorporated into the analysis. Each of these data sources are described below with information about how data were acquired and any potential limitations and biases when relevant.

Child Welfare Administrative Data

The child welfare administrative data had two primary purposes. First, these data were used to identify the sample of youth who age out of foster care. Second, these data also provided demographic and case history variables about the sample. This information was useful for describing the sample and also served as controls in the study's multivariate models. Child welfare administrative data were obtained in all three states.

- *California:* The California Child Welfare Services/Case Management System (CWS/CMS) is California's automated child welfare data management system. CWS/CMS is a centralized statewide system that allows state or county child welfare workers to share information on child abuse cases. County conversion to CWS/CMS began in January 1997. On December 31, 1997, all 58 counties were online and accessing CWS/CMS. On a quarterly basis programming staff at the University of California, Berkeley, Center for Social Services Research (CSSR) refresh two aggregate longitudinal files, which are made available to CSSR researchers as well as California Department of Social Services (CDSS) staff. Currently, these include information for the period January 1, 1998, through December 31, 2005.

- *Minnesota:* The Minnesota child welfare data was provided by Minnesota's Department of Human Services (DHS). DHS was also able to provide data on youth participation in the Minnesota Family Investment Program (MFIP), the state's TANF grant program, through their AFDC/MFIP database. All cases were stripped of identifiers before being sent to the Urban Institute for analysis.

- *North Carolina*: The North Carolina child welfare data source is comprised of data extracts from the Service Information System (SIS), a state maintained data system. Basic SIS data for this study include demographic information on service recipients along with information on the services provided for these clients. Additional data from the Central Registry and Child Placement and Payment System (CPPS) have been combined with SIS data into a longitudinal dataset. The Jordan Institute updates this longitudinal dataset monthly using end of the month extracts from SIS and CPPS. Researchers at the Jordan Institute use this longitudinal file for research and technical assistance to county and state staff. Data are available from 1992 until present.

Public Assistance Data

TANF records were used to create a low-income comparison sample for the analyses in all three states. In North Carolina and Minnesota, these TANF data were also linked to study youth by social security number to create TANF receipt histories into adulthood. North Carolina used approximate matching on social security number, date of birth, and name to link across the two systems. Minnesota linked the two data sources by social security number.

- *California*: The California low-income com-

parison group was drawn from the California AFDC/TANF MediCal Eligibility Data. These files include information on monthly aid participation between January 1993 and June 2007. Child-only cases were included in this file.

- *Minnesota*: The Minnesota low-income comparison group was constructed from data housed by the Minnesota Department of Human Services. These data were encrypted and sent to the Urban Institute for analysis. Cases were selected if they were 17 years old on December 31, 1998, and if they were classified as a child dependent (family status code C). Child-only cases were included in this file.

- *North Carolina*: In North Carolina, the low-income sample represents children who were part of a regular, monthly cash assistance grant from North Carolina's TANF program, Work First, who were born in 1981. This consists of all children who received Work First and were 17 in December 1998, and were classified as a child dependent (a family status code of C or D). Child only cases were included. Children who were classified only as a teen parent (a family status code of P) were not included. Also, children whose families only received diversion assistance, as opposed to a regular Work First grant, were not included. Information on these individuals was drawn from a set of longitudinal files that track the experiences of all families and individuals who have participated in the Aid to Families with Dependent Children (AFDC) or Work First program in North Carolina for one or more months since January 1995. These longitudinal files were constructed and are maintained using monthly extracts from state computer systems used in the administration of the program.

Unemployment Insurance (UI) Wage Reporting Data

UI administrative data were used in all three states to describe the earnings and employment histories of the youth who age out of foster care and the youth from low-income families.

- *California:* In California social security numbers from youth in the sample were used to select the appropriate employment records from the California Employment Development Department's Quarterly Wage Data files (EDD). Data were transformed into longitudinal format with two variables per quarter indicating quarter of receipt and quarterly wages between January 1, 1996, and December 31, 2005.

- *Minnesota:* Minnesota's UI data were obtained after linking social security numbers from youth in the sample with administrative data from the Minnesota Department of Employment and Economic Development.

- *North Carolina:* In North Carolina, these data were obtained by linking encrypted social security numbers from youth in the sample with a dataset composed of wage information obtained from North Carolina's Employment Security System. The Jordan Institute at the University of North Carolina receives quarterly updates of information on wage amount and sector of employment for the relevant individuals. The UI data used in the current analysis were last updated in August 2007, with data through March 2007.

There are some important limitations with the UI data to note. First, it may underestimate employment for the youth in this sample for a few reasons. For one, the Unemployment Insurance program does not cover all employment. For example, individuals employed by the military and federal government are not included. Neither is informal work and employment that is "off the books," which may be a job sector that former foster youth are more likely to occupy. Unemployment Insurance data explicitly exclude much of the agricultural sector and domestic services, as well as the self-employed. These exclusions suggest that earnings data derived from UI records will underestimate employment and earnings. Hotz and Scholz (2001) compare UI records to survey data and estimate that the gap in work covered by Unemployment Insurance is at least 13 percent, and that the understatement of reported wages may be 11 to 14 percent. This may account for a portion of the disparity between youth earnings in the state analyses, which are based on UI data, and youth earnings in the national analysis, which are based on NLSY survey data. In addition, since UI data is collected at the state level, employment for youth who move out of state or

who live in a state but work across the border would not appear in the data. The net effect of this limitation is that the analyses are likely to underestimate employment and earnings among the study samples. This problem does not apply to youth who migrate across counties within a state, only for those who leave the state.

Another limitation of the UI data is that they report individual quarterly earnings, rather than wage rates or job histories. Researchers are therefore unable to distinguish between a high-paying job that lasts only a small portion of a quarter and a low-paying job that is held by a youth for the entire quarter. While this is a limitation, the models are still able to predict the total resources a youth has available at a given time. For this population, a measure of total resources available is likely to be more significant in determining well-being and labor market success than a measure of job quality, such as the wage rate.

Finally, the UI data do not provide information on other resources youth might have available to them. UI data only provide information on individual earnings. A youth may also benefit from the earnings of a spouse or other family member, or a roommate during the study period, although these resources will not be captured in the UI data. Youth also might receive income benefits from other service programs, like TANF, SSI, or Social Security.

National Longitudinal Survey of Youth 1997 (NLSY97)

The NLSY97 was used in this study to create baseline estimates of employment outcomes for all youth nationally. The NLSY97 is a national probability sample of approximately 9,000 youth born in the years 1980 through 1984. The youth were first interviewed in 1997 and have been interviewed on an annual basis since. The most recently available data were collected in 2004-2005, representing the eighth round of interviewing. The NLSY97 is available in public-use form via the Internet. For the purpose of this study, we selected youth born in 1980, making them age 18 as of December 31, 1998, a comparable age group to the child welfare population being examined. We restricted the sample to those youth who were interviewed in all eight rounds and were observed through their 24th birthday, using panel weights to account for non-response across the years. This resulted in a sample of 878 youth used for the analysis. The work histories in the NLSY97 were reconstructed on a quarterly basis, and used to construct employment and earnings outcomes.

Wage rates were constructed by multiplying the "usual" wage received at a given employer by the number weeks worked in the quarter for that employer. Wage rates across all employers during a given week were summed. The average wage across all jobs held in a given week was multiplied by the total number of "usual" hours worked for that week at all jobs generating weekly earnings. Weekly earnings were summed across the thirteen weeks of each quarter to create quarterly earnings. The distributions of earnings for each quarter were trimmed, deleting the top and bottom 1% of all positive earnings for that quarter.

Monthly histories of TANF receipt came from the income section of the NLSY97. Gender and race/ethnicity were assigned based on the first round interview data. Rural status was assigned based on the youth's location at the time of their 1997 interview.

Measurement error exists in the calculated earnings measures. Self-reported wages, hours, and weeks of employment are subject to various types of response error. In addition to the usual errors in survey data, our calculation method led to two other types of error. For one, NLSY97 respondents report their "usual" wage and "usual" weekly hours at the interview date. This information is updated at each interview, but interim changes in wage rates or hours worked are not captured. Most likely the wage rate is higher than was received over the entire interview period, leading to upward bias in wage rates. Varying hours worked or changes from part time to full time (or vice versa) could happen at any time, so the measurement error in hours worked may not be biased. Second, we used the average hourly wage for all jobs held in a given week. For youth with multiple jobs with a high degree of variance in their wage rates, the average wage will not be accurate if hours worked differ significantly across the different jobs. However, an inspection of the data indicated that (a) only a small percentage of youth held multiple jobs concurrently, and (b) variation in wage rates across multiple jobs was typically low. This type of measurement error may not be

biased, though it is likely that higher wage concurrent jobs are associated with fewer hours, leading to upward bias in the earnings measure.

More jobs are covered by the NLSY97 than by the UI data, because the NLSY97 is not restricted to employment covered by the unemployment insurance program. However, retrospective reporting of job histories can be subject to various response errors. In addition to recall errors, respondents tend not to report short jobs, especially if they are sufficiently in the past. They also tend to merge two employment spells into one, reporting a longer time period with a given employer. While typically not a major source of error, these situations occur more with youth and anyone with a series of short-term jobs.

Supplemental Data

Several additional data sources were used to capture local labor market conditions, such as the local unemployment rate and cost of living. These data were linked with youth based on their county of residence.

- *Fair Market Rent:* The cost of living varies widely, not only across regions of the country, but also across communities within a state. Nationally measured income thresholds, such as the federal poverty level, cannot capture this variability and are often determined independently of market conditions. This study uses the Department of Housing and Urban Development's (HUD) annual fair market rent (FMR) for an efficiency apartment as a market-based, local, cost of living threshold. FMRs are set at the 40th percentile of the rent distribution for standard quality rental housing units in a county. HUD uses these FMRs to determine payment amounts for low-income housing vouchers, renewal rents for Section 8 housing, and to serve as a rental ceiling for the HOME rental assistance program. FMRs are reported annually at the county level, at http://www.huduser.org/datasets/fmr/fmrs/select_geography.odb.

  The FMR-based cost of living threshold used in this study for county i in year t is equal to (10/3) x (FMR_{it}). This is the income level at which 30 percent of earnings will be spent on rent if that rent is at HUD's reported FMR level. This measure uses the 30 percent figure to scale monthly income, because many HUD housing assistance programs require that beneficiaries spend 30 percent of their income on rent before receiving assistance (Department of Housing and Urban Development, 2007). The FMR cost of living measure therefore reflects both local market heterogeneity, and income thresholds for important federal, means-tested assistance programs.

  This measure is used in this study in bivariate analyses to determine the portion of youth who age out of foster care and youth from low-income families that do not earn a living wage. FMR-based cost of living thresholds were not produced for the national, NLSY97 comparison sample because local geographic information is not available in the NLSY97. Calculating a national cost of living threshold from local FMRs to use with the national comparison sample would defeat the purpose of using a heterogeneous measure of the cost of living.

- *County Unemployment Rates:* County unemployment rates are used as a control variable in models predicting employment outcomes. These rates are produced monthly at the county level by the Bureau of Labor Statistics' Local Area Unemployment Statistics (LAUS) program. These monthly figures are combined to produce mean quarterly unemployment rates by county.

Both the FMRs and the local unemployment rates are county based, and they are linked to sample youth using indicators for county of removal (for the child welfare sample), or county where TANF grant was received (for low-income comparison sample). A small limitation of this data is that this linking will inaccurately represent local economic conditions if the youth moves out of the county over the course of the study.

Another limitation of the local unemployment rates is that they are produced using a different definition of unemployment than the employment indicators for the study youth. The Bureau of Labor Statistics (BLS) considers an individual "unemployed" if they are not working and they are actively seeking employment. Individuals who are not seeking employment are considered to be out of the labor force, and are not

included in the unemployment rate (BLS 2005). However, since there is no indication in the data of whether a study youth is seeking employment or not, all youth who are not employed are assumed to be "unemployed" for the purposes of the analysis. In other words, the employment variables in this study consider voluntary and involuntary unemployment to be the same phenomenon; the BLS data only counts involuntary unemployment.

Sample and Variable Creation

The sample of interest, youth aging out of foster care, was created, and comparable samples of youth from low-income families and youth nationally were also developed. Variables were created for the analyses to measure outcomes and provide information on demographic characteristics and case history characteristics.

Sample Creation

Comparable samples were created for youth who age out of foster care, youth from low-income families, and a national sample of youth.

- *Age Out Youth:* The sample includes all youth who were 17 years old and in a child welfare placement on December 31, 1998, who later age out of care or emancipate from care. Initially, all youth ages 16 through 18 who were in a child welfare placement on December 31, 1998, were selected. However, it was decided to only include youth who were 17 years old on December 31, 1998, for two reasons. First, most youth who age out leave care on or shortly after their 18th birthday. An 18-year-old cohort would disproportionately sample youth who stay in care for an extended period of time because these youth are in care in December, 1998, after their 18th birthday, by definition of the sample. By sampling 17-year-olds, the age out cohort will represent the correct distribution of youth who stay in care past their 18th birthday and youth who exit care on or soon after their birthday. Second, the 16-year-old cohort was not used because these youth would only be 23 in the latest year for which UI data was available. Given ASPE's interest in employment outcomes for youth in their mid-twenties, and that sample sizes for the 17-year-old cohort were sufficient, only 17-year-olds were used.

One bias to be aware of with this sample is that youth in care for an extended period of time may be over-represented. Since the selection of the sample is anchored to a single point in time, December 31, 1998, youth who are in care for an extended period of time will be disproportionately selected, relative to youth who spend only a short time in care. The characteristics of youth who stay in the child welfare system for an extended period of time may be different from youth with shorter placement histories, and these may be correlated with the outcome variables. It is difficult to determine the direction of the potential bias. Findings might be biased in a negative direction as youth in care longer may fare worse on employment outcomes. However, it might also be argued that youth in care longer receive more supports and may fare better, which would bias findings in the other direction.

Researchers also elected to anchor outcomes for these youth at particular ages rather than at a certain number of years post-discharge from care, as prior studies have done. Depending on when they discharge, youth could be different ages at five years after discharging from care. For example, youth who discharge at 18 would be 23, but youth who discharge at 20 would be 25, which could affect outcomes as a 25-year-old likely earns more on average than a 23-year-old. Hence, in the models, outcomes are assessed at particular ages and the age at discharge is included as a control.

Defining this sample also presented some challenges. In a very small number of cases, the case was never closed but the youth were presently 24 years old. In these cases a discharge age of 19 is used. Another issue in defining this population occurs when youth emancipate but go to live with their biological families. It is likely that most of these youth are classified in data systems as having aged out of care. There may be some cases, however, where the caseworker indicated the discharge reason was reunified because the youth was living with family. It is not possible to identify when this occurs, so samples for this study do not include these youth.

- *Low-Income Youth:* A comparable sample of youth from low-income families was created by selecting all youth age 17 on December 31, 1998, who were listed as a dependent on a family TANF grant.

- *National Youth:* This sample included youth age 18 in 1998 in the NLSY97. To follow youth for a sufficient number of years in the NLSY97, a cohort of 18-year-olds had to be used rather than 17-year-olds. These youth are not exiting from a system around age 18, so it is less important to pick them up prior to 18. It is also unlikely that there would be major differences in the economy in a one year span that would dramatically affect youth's labor market experiences. Specifically, when looking at earnings at age 20, it would be 2001 for the youth who age out and low-income youth but 2002 for the NLSY sample.

Researchers also attempted to compare youth who aged out of foster care to those who exited from foster care for other reasons. Specifically, a group of youth who had reunified was created as well as groups that had experienced a planned exit (i.e., adoption or guardianship) or unplanned exit (i.e., hospitalization, incarceration, or runaway). There were some significant limitations to using these groups, however. Most importantly, given the short observation period, they are not truly representative of youth that may have experienced a particular outcome. For example, reunified youth would not be representative of all reunified youth given only those who reunified after age 16 would be included in the sample. To say that reunified youth had better or worse employment outcomes than youth who age out would not be accurate, as the reunified group would be missing a substantial portion of the youth who had the outcome of reunification, but at an earlier age. This is not a problem for youth who age out of care, as that outcome only occurs at age 18 or later. Another limitation of the other child welfare groups is that to create a long enough observation period at all, the 16-year-old cohort has to be used. For these youth, employment data is only available through age 23.

Variable Creation

Variables were created to capture employment outcomes, case history, and demographic characteristics. For the most part, outliers were kept in the data and not adjusted. Analyses suggested that the results of the study were not sensitive to outliers in the data. In one exception, a youth had a very high number of placements, which appeared to be the result of rotating between placements. For this youth only, the number of unique placements was used as the total number of placements.

- *Employment Variables*: Three types of employment variables are created to measure employment, earnings, and stability (or the regularity of employment).

  Employment—UI data provide quarterly earnings information for sample youth. A youth is considered employed in a quarter if he or she has non-zero earnings during that quarter. When UI data are missing for a youth, it is assumed that the youth was not employed in that quarter.

  Earnings—Earnings from multiple jobs are aggregated, so all sources of wage income are included in a single earnings variable. Earnings are annualized from the quarterly UI data by summing the earnings of the four quarters subsequent to the quarter of the youth's birthday. For example, a youth's earnings in the year between age 18 and 19 are defined as the earnings in the first quarter subsequent to the quarter of the youth's 18th birthday, as well as the following three quarters. Average monthly earnings were calculated by dividing annual earnings by twelve. Quarters with zero earnings are included in the calculation of average monthly earnings, as well as quarters with zero earnings. Since periods of non-employment are included in the average monthly earnings measure, this measure does not provide information on time spent working. Furthermore, wage rates cannot be calculated from UI data because the data do not report how many hours were worked in a given quarter; they only report total earnings.

  Stability—Stability is measured using four consecutive quarters of employment or portion of quarters employed in a year. Time until four consecutive quarters of employment begins its count in the quarter subsequent to the quarter of the youth's 18th birthday.

- *Case History Variables:* Variables were created to capture age at exit, age at first removal from care, reasons for the most recent removal, total number of removals, number of placements total for all removals, cumulative months in care, and last known placement type. For some variables, discrepancies between the states had to be resolved. For example, placement types for children in care were collapsed into several major categories for the analyses (see Table 6). In addition, episodes were excluded from the construction of the case history variables if the episode lasted less than eight days. A single placement was excluded if it lasted less than twenty-four hours.

Table 6. Placement Type Categories

Placement Type	***Detailed Placements Included***
Foster Family Home – Relative	Relative Home, Tribal Specified Home
Foster Family Home – Non-Relative	Agency Foster Family Home, Foster Family Agency Certified Home
Group Home	Small Family Home, Group Home, County Shelter
Other	Medical Facility, Adoptive Placement, Guardian Home, and Unspecified (child in open placement episode, but not out of home placement)
Supervised Independent Living	Supervised Independent Living (NC and MN only)

- *Demographic Variables:* Demographic information included gender, race/ethnicity, a measure of urbanicity, and employment prior to age 18. There were a few instances where state differences arose.

  Race/Ethnicity—In North Carolina and Minnesota, most racial categories had such a small sample size that they could not be included in the multivariate analysis. In these states, the racial categories were collapsed into "White, non-Hispanic," "African American," and "Other non-White."

  Urbanicity—County of residence was derived from the county where a youth spent their most recent placement, in the case of the child welfare sample, and the county where a youth received their TANF grant for the low-income comparison sample. In North Carolina and Minnesota, these counties were classified as being "rural" or "not rural," based on their population size. Counties were considered rural if they have a population of less than 100,000. In California urbanicity is conceptualized as Los Angeles and other. Prior research using similar data in California suggests the importance of this differentiation.

Analyses

Bivariate analyses were conducted to describe the demographic and case history characteristics of the samples. These analyses were also used to profile the employment outcomes at each age for the different groups. Multivariate analyses were used 1) to look at differences between employment outcomes for the different groups, controlling for demographic factors and 2) to look at the demographic and case history factors that affect employment outcomes for youth aging out of foster care.

Bivariate Analysis

Means, medians, standard deviations, and frequencies were produced when relevant on all employment, case history, and demographic variables for the youth who age out of foster care, the low-income comparison sample, and the national comparison group.

The age-out youth and low-income youth samples were further sub-divided into youth who had worked at some point between age 18 and 24 and youth who had not worked between ages 18 and 24. These sub-divided samples were analyzed separately in the bivariate and multivariate analyses. Including the groups together would weight the samples heavily toward zero. The report focuses on the sample of youth who worked. Given the small sample sizes for the sample of youth that did not work, estimates for this group are not presented. This group is included in the trajectory analysis, however, which is described below.

While youth may have worked at some point between ages 18 and 24, they might have no earnings for some extended period. When a youth

has no earnings for an entire year, these years of non-employment are still included in the calculation of means and medians in the bivariate analysis. Since youth who age out and low-income youth may spend substantial portions of their early adulthood not employed, there is a strong positive skew to the distribution of the employment and earnings variables, with variable means typically exceeding medians.

Appendix tables A1 to A12 reporting bivariate results do not report categories with cell sizes smaller than 6 to protect the confidentiality of the sample youth. In these cases categories are collapsed to attain sufficient sample sizes. As a result, states may have different categories for some variables.

Multivariate Analysis

Two primary sets of multivariate models were run to assess differences on employment outcomes for youth who age out of foster care and low-income youth and to determine factors associated with employment outcomes for youth who aged out.

- *Comparing Youth Who Aged Out and Low-Income Youth:* A first set of models was developed to compare differences between employment outcomes at age 24 for youth who age out of foster care and youth from low-income families. These models controlled for demographic factors, prior employment, and the unemployment rate in the youth's county at the time of exit (see tables A12-A14 in the Appendix for more details on the model specifications). The universe for these models included the samples of youth who age out and youth from low-income families. A dummy variable for being from a low-income family was used to indicate differences between the two samples. Different model specifications were used depending on the particular outcome. Cox proportional hazard models were used to measure the effect of the independent variables on the relative risk of being employed for four consecutive quarters by age 24. Logit models were estimated to determine the effect of these independent variables on the likelihood of being employed at age 24. Ordinary least squares (OLS) regressions were used to predict the effect of the independent variables on the natural logarithm of average monthly earnings at age 24. By using the natural logarithm of average monthly earnings instead of level measures of earnings, the regressions are able to predict the percentage change in the earnings as a result of a change in the independent variables.

- *Determining Factors Associated with Employment Outcomes for Youth Who Aged Out*: A second set of models was estimated to look at the demographic and case history factors that affect employment outcomes for youth who age out of foster care. These models included case history and demographic factors to predict employment outcomes (see tables A16-A18 in the Appendix for more details on the model specifications). The models also controlled for prior employment and the unemployment rate in the youth's county at the time of exit. The universe for these models included just the sample of youth who age out of foster care. As with the first set of models, hazard models were used to predict four consecutive quarters of employment by at 24, logit models were used to predict likelihood of being employed at age 24, and OLS models were used to predict earnings at age 24.

It is very likely that siblings may be in the child welfare and low-income comparison sample together, introducing autocorrelation into the error terms of the multivariate analyses. Unfortunately, sibling identifiers are not available in the child welfare administrative data, so the autocorrelation cannot be corrected in the analyses. The effect of the failure to correct for the inclusion of siblings in the data is that standard errors will be underestimated.

There are also likely to be many important omitted variables that are correlated with the outcome variables. It is not possible to control for a youth's history of education or incarceration, nor it is possible to identify the receipt of any social services besides TANF payments (even TANF grants are only included in the bivariate analyses, since they are not available in California). In addition, information is not available on pre-existing individual youth characteristics such as intelligence, motivation, and family background. In future research, these unobserved factors might be accounted for with the inclusion of child fixed effects in a longitudinal multivariate analysis. These fixed effects were not included in the analyses in this study because the employment outcomes are measured at age 24, rather than longitudinally. It is

likely that our measure of work experience prior to age 18 may also control for a significant amount of unobserved, child-level characteristics that are correlated with employment from age 16 to 17 ("prior work experience"), as well as employment at age 24. To the extent that "prior work experience" is measuring these unobserved characteristics, readers should not interpret the effect of "prior work experience" in the model as a causal relationship between early employment and employment during the mid-twenties. It is possible that merely being employed between ages 16 and 17 has no effect on later employment at all, but that youth who typically find employment earlier in their lives have other, unobserved qualities that cannot be reproduced or induced but that do improve later prospects of working.

A final issue with the multivariate analyses is the potential for overlap between the sample of youth who age out and the sample of youth from low-income families. Generally, families with a child that has been placed in foster care often lose their eligibility for TANF. As a result, very few foster youth should also be dependents on a TANF grant. Researchers did in fact find that only a very small portion of these samples overlapped in North Carolina and California, and these cases were removed from the sample of youth from low-income families. Researchers suspect the overlap is likely due to cases moving in and out of child welfare. Specifically, in some instances, TANF cases may be kept open while parents try to reunify with their children. The Urban Institute did not have identifying information for the Minnesota samples, so it was not possible to check for overlap for this state.

Group Based Trajectory Analysis

In many cases, a population does not follow a single pattern of some type of behavior. Several distinct patterns may exist simultaneously in the population. By relying entirely on mean employment rates, or on models that predict individual deviations from these mean outcomes, an analysis may not accurately describe the heterogeneity of patterns in a population. To capture different employment patterns in the study, researchers used the group based trajectory analysis method developed by Nagin (1999) and his colleagues. Trajectory analysis uses maximum likelihood estimation to identify which distinct cubic functions of age are best suited to describe the actual employment trajectories of sample youth. Parameter estimates for these functions were produced using PROC TRAJ, a SAS macro developed by Bobby Jones (Jones, Nagin, and Roeder, 2001). The correct number of groups specified in the model is determined jointly with the Bayesian Information Criterion estimates (indicators of model fit produced by PROC TRAJ), and *a priori* theoretical knowledge of meaningful trajectory groups.

A major advantage of trajectory analysis over other methods of pattern recognition (such as cluster analysis) is that measures of statistical significance can be produced for parameters that describe the trajectory groups. Confidence intervals for the entire trajectory (as opposed a single parameter in the time function) were also derived using Taylor Series linearization, also known as the Delta Method. A four group solution to the group based trajectory analysis was used in California and Minnesota, and a five group solution was used in North Carolina.

Tables Appendix

Note: Cell sizes less than 5 are not reported, with the exception of the missing category.

Table A1. CA: Demographic Characteristics						
	Age-Out Age 17 on December 31, 1998, and employed between ages 18 & 24			**Low-Income** Age 17 on December 31, 1998, and employed between ages 18 & 24		
Sample Size	N			N		
	2,697			43,725		
Gender	n	p	sd	n	p	sd
Male	1,082	0.40	0.01	21,201	0.48	0.00
Female	1,614	0.60	0.01	22,524	0.52	0.00
Missing	1	0.00	0.00	0	0.00	0.00
Race/ Ethnicity	n	p	sd	n	p	sd
Black	1,036	0.38	0.01	7,782	0.18	0.00
White	874	0.32	0.01	10,041	0.23	0.00
Asian or Pacific Islander	66	0.02	0.00	9,251	0.21	0.00
Hispanic	697	0.26	0.01	16,070	0.37	0.00
Native American	22	0.01	0.00	260	0.01	0.00
Missing	2	0.00	0.00	321	0.01	0.00
Removed in Los Angeles? (CA Only)	n	p	sd	n	p	sd
Yes	1,078	0.40	0.01	15,528	0.36	0.00
Removed in a rural county?	n	p	sd	n	p	sd
Yes						

Table A2. MN: Demographic Characteristics						
	Age-Out Age 17 on December 31, 1998, and employed between ages 18 & 24			**Low-Income** Age 17 on December 31, 1998, and employed between ages 18 & 24		
Sample Size	N			N		
	320			4,786		
Gender	n	p	sd	n	p	sd
Male	164	0.51	0.03	2,439	0.51	0.01
Female	156	0.49	0.03	2,347	0.49	0.01
Race/ Ethnicity	n	p	sd	n	p	sd
Black	45	0.14	0.02	1,179	0.25	0.01
White	219	0.68	0.03	2,018	0.42	0.01
Asian or Pacific Islander	26	0.08	0.02	849	0.18	0.01
Hispanic	10	0.03	0.01	316	0.07	0.00
Other	19	0.06	0.01	406	0.08	0.00
Missing	1	0.00	0.00	18	0.00	0.00
Removed in Los Angeles?	n	p	sd	n	p	sd
Yes						
Removed in a rural county?	n	p	sd	n	p	sd
Yes	163	0.51	0.03	1,631	0.34	0.01

Table A3. NC: Demographic Characteristics						
	Age-Out Age 17 on December 31, 1998, and employed between ages 18 & 24			**Low-Income** Age 17 on December 31, 1998, and employed between ages 18 & 24		
Sample Size	N			N		
	284			2,709		
Gender	n	p	sd	n	p	sd
Male	135	0.48	0.03	1,217	0.45	0.01
Female	149	0.52	0.03	1,492	0.55	0.01
Race/ Ethnicity	n	p	sd	n	p	sd
Black	137	0.48	0.03	1,953	0.72	0.01
White	127	0.45	0.03	586	0.22	0.01
Other	20	0.07	0.02	170	0.06	0.00
Removed in Los Angeles?	n	p	sd	n	p	sd
Yes						
Removed in a rural county?	n	p	sd	n	p	sd
Yes	108	0.38	0.03	1,193	0.44	0.01

Table A4. CA: Case History			
	Age-Out 17 years old on December 31, 1998, and employed between ages 18 & 24		
Sample Size	N		
	2,697		
Age at Exit	n	p	sd
17	408	0.15	0.01
18	1,807	0.67	0.01
19	403	0.15	0.01
20 and older	79	0.03	0.00
Age at First Removal	n	p	sd
Under 2	24	0.01	0.00
Ages 2-6	508	0.19	0.01
Ages 7-9	572	0.21	0.01
Ages 10 or 11	288	0.11	0.01
Ages 12 or 13	394	0.15	0.01
Ages 14 or 15	580	0.22	0.01
Ages 16 or 17	331	0.12	0.01
Reasons for Most Recent Removal	n	p	sd
Physical Abuse	321	0.12	0.01
Sexual Abuse	229	0.08	0.01
Neglect	1,546	0.57	0.01
Other	173	0.06	0.00
Missing	428	0.16	0.01
Total Number of Episodes (Removals)	n	p	sd
1	1791	0.66	0.01
2	539	0.20	0.01
3	179	0.07	0.00
4	96	0.04	0.00
5	35	0.01	0.00
6 or more	57	0.02	0.00
Number of Placements (All Episodes) (Continuous)	mean	median	sd
	5	3.00	4.06
Cumulative Months in Out of Home Care (Continuous)	mean	median	sd
	83	75.00	49.23
Last Known Placement Type	n	p	sd
Foster Family Home - Relative	1,022	0.38	0.01
Foster Family Home - Non-Relative	859	0.32	0.01
Group Home/Institution	606	0.22	0.01
Supervised Independent Living			
Other	210	0.08	0.01

Table A5. MN: Case History			
	Age-Out 17 years old on December 31, 1998, and employed between ages 18 & 24		
Sample Size	N		
	320		
Age at Exit	n	p	sd
17	65	0.20	0.02
18	189	0.59	0.03
19	49	0.15	0.02
20 and older	17	0.05	0.01
Age at First Removal	n	p	sd
Under 2	8	0.03	0.01
Ages 2-6	33	0.10	0.02
Ages 7-9	31	0.10	0.02
Ages 10 or 11	39	0.12	0.02
Ages 12 or 13	59	0.18	0.02
Ages 14 or 15	77	0.24	0.02
Ages 16 or 17	73	0.23	0.02
Reasons for Most Recent Removal	n	p	sd
Physical Abuse	25	0.08	0.02
Sexual Abuse	20	0.06	0.01
Neglect	145	0.45	0.03
Other	126	0.39	0.03
Missing	4	0.01	0.01
Total Number of Episodes (Removals)	n	p	sd
1 or more*	320	1.00	0.00
Number of Placements (All Episodes) (Continuous)	mean	median	sd
	6	4	5.31
Cumulative Months in Out of Home Care (Continuous)	mean	median	sd
	59	45.66	45.53
Last Known Placement Type	n	p	sd
Foster Family Home – Relative	41	0.13	0.02
Foster Family Home – Non-Relative	169	0.53	0.03
Group Home/ Institution	39	0.12	0.02
Supervised Independent Living	31	0.10	0.02
Other	20	0.06	0.01
Missing	20	0.06	0.01

*****Most youth had only one episode.

Table A6. NC: Case History			
	Age-Out 17 years old on December 31, 1998, and employed between ages 18 & 24		
Sample Size	N		
	284		
Age at Exit	n	p	sd
17	16	0.06	0.01
18	222	0.78	0.02
19	21	0.07	0.02
20	11	0.04	0.01
21	14	0.05	0.01
Age at First Removal	n	p	sd
Ages 0-6	27	0.10	0.02
Ages 7-9	51	0.18	0.02
Ages 10 or 11	28	0.10	0.02
Ages 12 or 13	55	0.19	0.02
Ages 14 or 15	64	0.23	0.02
Ages 16 or 17	59	0.21	0.02
Reasons for Most Recent Removal	n	p	sd
Physical Abuse	29	0.10	0.02
Sexual Abuse	13	0.05	0.01
Neglect	200	0.70	0.03
Other	42	0.15	0.02
Total Number of Episodes (Removals)	n	p	sd
1	238	0.84	0.02
2	37	0.13	0.02
3	9	0.03	0.01
Number of Placements (All Episodes)	mean	median	sd
	8.43	6.00	6.62
Cumulative Months in Out of Home Care	mean	median	sd
	67	55.50	45.41
Last Known Placement Type	n	p	sd
Foster Family Home - Relative	27	0.10	0.02
Foster Family Home - Non-Relative	113	0.40	0.03
Group Home/ Institution	85	0.30	0.03
Supervised Independent Living	24	0.08	0.02
Other	35	0.12	0.02

Table A7. CA: Employment Characteristics						
	Age-Out 17 years old on December 31, 1998, and employed between ages 18 & 24			**Low-Income** Age 17 on December 31, 1998, and employed between ages 18 & 24		
Sample Size	N			N		
	2,697			43,725		
Average monthly earnings at age (dollars):	mean	median	sd	mean	median	sd
16	16.95	0.00	129.24	18.54	0.00	137.84
17	64.39	0.00	500.50	57.12	0.00	180.71
18	127.21	9.58	403.44	130.02	3.83	258.43
19	283.49	125.13	445.44	332.35	171.90	436.75
20	420.52	191.55	705.63	504.62	302.46	594.34
21	470.11	153.80	895.98	599.16	342.67	718.86
22	523.31	141.84	953.76	705.63	408.56	848.15
23	584.96	118.74	928.57	819.31	488.48	998.40
24	687.64	166.63	1,075.82	971.97	602.28	1,131.04
Ever employed at age:	n	p	sd	n	p	sd
16	310	0.11	0.01	5,431	0.12	0.00
17	836	0.31	0.01	13,550	0.31	0.00
18	1,431	0.53	0.01	22,240	0.51	0.00
19	2,072	0.77	0.01	33,084	0.76	0.00
20	2,021	0.75	0.01	34,182	0.78	0.00
21	1,845	0.68	0.01	32,908	0.75	0.00
22	1,764	0.65	0.01	32,269	0.74	0.00
23	1,689	0.63	0.01	32,079	0.73	0.00
24	1,677	0.62	0.01	32,169	0.74	0.00
Number of quarters employed at age:	mean	median	sd	mean	median	sd
16	0.18	0.00	0.57	0.20	0.00	0.65
17	0.63	0.00	1.12	0.66	0.00	1.16
18	1.21	1.00	1.42	1.20	1.00	1.45
19	2.06	2.00	1.52	2.08	2.00	1.55
20	2.16	2.00	1.60	2.35	3.00	1.60
21	1.98	2.00	1.65	2.30	3.00	1.65
22	1.93	2.00	1.69	2.31	3.00	1.68
23	1.87	2.00	1.71	2.34	3.00	1.69
24	1.92	2.00	1.75	2.40	3.00	1.71
Age when first employed	mean	median	sd	mean	median	sd
	18.46	18.00	1.02	18.46	18.00	1.01
Ever employed for four consecutive quarters as of age:	n	p	sd	n	p	sd
19	711	0.26	0.01	12,325	0.28	0.00
20	1,260	0.47	0.01	22,363	0.51	0.00
21	1,537	0.57	0.01	27,465	0.63	0.00
22	1,736	0.64	0.01	30,556	0.70	0.00
23	1,847	0.68	0.01	32,957	0.75	0.00
24	1,939	0.72	0.01	34,948	0.80	0.00
Receipt of TANF at age:	n	p	sd	n	p	sd
19						
20						
21						
22						
23						
24						
Total number of quarters received TANF:	mean	median	sd	mean	median	sd
Earned Fair Market Rent Income Level at age:	n	p	sd	n	p	sd
19	38	0.01	0.00	788	0.02	0.00
20	85	0.03	0.00	1,951	0.04	0.00
21	121	0.04	0.00	3,057	0.07	0.00
22	127	0.05	0.00	3,553	0.08	0.00
23	149	0.06	0.00	4,528	0.10	0.00
24	177	0.07	0.00	5,550	0.13	0.00

Table A8. MN: Employment Characteristics						
	Age-Out 17 years old on December 31, 1998, and employed between ages 18 & 24			**Low-Income** Age 17 on December 31, 1998, and employed between ages 18 & 24		
Sample Size	N			N		
	320			4,786		
Average monthly earnings at age (dollars):	mean	median	sd	mean	median	sd
16	20.16	0.00	51.89	36.22	0.00	82.52
17	81.82	16.07	129.09	128.89	45.26	183.40
18	153.39	81.25	201.38	219.80	267.44	121.60
19	238.45	145.46	288.80	394.72	444.95	255.12
20	329.06	133.39	469.71	532.66	320.65	599.47
21	339.54	132.77	489.05	584.66	300.88	700.10
22	412.59	83.88	614.18	659.74	321.72	790.51
23	465.49	706.06	84.15	743.28	381.07	880.21
24	573.52	163.84	814.00	863.37	463.14	1,180.16
Ever employed at age:	n	p	sd	n	p	sd
16	82	0.26	0.02	1,740	0.36	0.01
17	182	0.57	0.03	3,064	0.64	0.01
18	216	0.68	0.03	3,571	0.75	0.01
19	255	0.80	0.02	4,002	0.84	0.01
20	236	0.74	0.02	3,883	0.81	0.01
21	230	0.72	0.03	3,627	0.76	0.01
22	205	0.64	0.03	3,475	0.73	0.01
23	200	0.63	0.03	3,427	0.72	0.01
24	209	0.65	0.03	3,418	0.71	0.01
Number of quarters employed at age:	mean	median	sd	mean	median	sd
16	0.50	0.00	1.02	0.73	0.00	1.17
17	1.32	1.00	1.43	1.61	1.00	1.52
18	1.86	2.00	1.60	2.06	2.00	1.56
19	2.14	2.00	1.49	2.43	3.00	1.48
20	2.05	2.00	1.60	2.45	3.00	1.56
21	1.93	2.00	1.55	2.27	3.00	1.62
22	1.83	2.00	1.67	2.22	3.00	1.67
23	1.83	2.00	1.69	2.25	3.00	1.70
24	2.02	2.00	1.72	2.30	3.00	1.72
Age when first employed	mean	median	sd	mean	median	sd
	18.56	18.00	1.07	18.46	18.00	0.94
Ever employed for four consecutive quarters as of age:	n	p	sd	n	p	sd
19	85	0.27	0.02	1,685	0.35	0.01
20	143	0.45	0.03	2,677	0.56	0.01
21	173	0.54	0.03	3,089	0.65	0.01
22	197	0.62	0.03	3,376	0.71	0.01
23	205	0.64	0.03	3,567	0.75	0.01
24	224	0.70	0.03	3,747	0.78	0.01
Receipt of TANF at age:	n	p	sd	n	p	sd
19-20	7	0.02	0.01	1,357	0.28	0.01
21	6	0.02	0.01	844	0.18	0.01
22	8	0.03	0.01	914	0.19	0.01
23	6	0.02	0.01	898	0.19	0.01
24	7	0.02	0.01	749	0.16	0.01
Total number of quarters received TANF:	mean	median	sd	mean	median	sd
	0.28	0.00	1.94	2.87	0.00	5.76
Earned Fair Market Rent Income Level at age:	n	p	sd	n	p	sd
19-20	24	0.08	0.01	970	0.20	0.01
21	23	0.07	0.01	807	0.17	0.01
22	37	0.12	0.02	844	0.18	0.01
23	42	0.13	0.02	936	0.20	0.01
24	53	0.17	0.02	1,103	0.23	0.01

Table A9. NC: Employment Characteristics						
	Age-Out 17 years old on December 31, 1998, and employed between ages 18 & 24			**Low-Income** Age 17 on December 31, 1998, and employed between ages 18 & 24		
Sample Size	N			N		
	284			2,709		
Average monthly earnings at age (dollars):	mean	median	sd	mean	median	sd
16	50.45	0.00	162.86	22.58	0.00	103.06
17	94.56	7.74	191.21	88.87	8.67	166.10
18	175.87	97.70	267.15	159.39	62.28	287.47
19	253.43	114.89	337.21	280.77	155.29	345.30
20	298.66	103.41	407.37	372.18	192.19	460.17
21	347.12	70.28	494.46	388.83	156.52	510.17
22	406.40	130.40	624.34	420.67	138.51	592.95
23	409.74	48.42	669.07	484.70	163.40	667.01
24	451.31	65.05	724.28	568.01	225.84	749.34
Ever employed at age:	n	p	sd	n	p	sd
16	78	0.27	0.03	621	0.23	0.01
17	148	0.52	0.03	1,432	0.53	0.01
18	226	0.80	0.02	1,863	0.69	0.01
19	230	0.81	0.02	2,176	0.80	0.01
20	207	0.73	0.03	2,074	0.77	0.01
21	178	0.63	0.03	1,905	0.70	0.01
22	187	0.66	0.03	1,791	0.66	0.01
23	171	0.60	0.03	1,807	0.67	0.01
24	173	0.61	0.03	1,831	0.68	0.01
Number of quarters employed at age:	mean	median	sd	mean	median	sd
16	0.56	0.00	1.10	0.38	0.00	0.82
17	1.18	1.00	1.39	1.24	1.00	1.43
18	1.98	2.00	1.37	1.73	2.00	1.51
19	2.26	2.00	1.49	2.22	2.00	1.50
20	2.07	2.00	1.60	2.22	2.00	1.58
21	1.85	2.00	1.70	2.02	2.00	1.65
22	1.86	2.00	1.64	1.95	2.00	1.68
23	1.78	1.50	1.71	2.00	2.00	1.70
24	1.75	1.00	1.68	2.09	2.00	1.71
Age when first employed	mean	median	sd	mean	median	sd
	18.34	18.00	0.83	18.43	18.00	1.00
Ever employed for four consecutive quarters as of age:	n	p	sd	n	p	sd
19	128	0.45	0.03	1,202	0.44	0.01
20	159	0.56	0.03	1,525	0.56	0.01
21	175	0.62	0.03	1,701	0.63	0.01
22	193	0.68	0.03	1,817	0.67	0.01
23	201	0.71	0.03	1,927	0.71	0.01
24	202	0.71	0.03	1,952	0.72	0.01
Receipt of TANF at age:	n	p	sd	n	p	sd
19	11	0.04	0.01	364	0.13	0.01
20	22	0.08	0.02	363	0.13	0.01
21	24	0.08	0.02	356	0.13	0.01
22	25	0.09	0.02	381	0.14	0.01
23	21	0.07	0.02	342	0.13	0.01
24	20	0.07	0.02	279	0.10	0.01
Total number of quarters received TANF:	mean	median	sd	mean	median	sd
	1.05	0.00	3.05	1.98	0.00	4.24
Earned Fair Market Rent Income Level at age:	n	p	sd	n	p	sd
19	6	0.02	0.01	61	0.02	0.00
20	10	0.04	0.01	144	0.05	0.00
21	13	0.05	0.01	193	0.07	0.00
22	15	0.05	0.01	236	0.09	0.01
23	24	0.08	0.02	321	0.12	0.01
24	27	0.10	0.02	367	0.14	0.01

Table A10. CA Trajectory Group Characteristics: Demographic, Case History, and Employment												
	NEVER CONNECTED			LATER CONNECTED			CONSISTENTLY CON-NECTED			INITIALLY CONNECTED		
Sample Size	1,058			626			797			682		
DEMOGRAPHICS												
Gender	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Male	429	0.41	0.02	276	0.44	0.02	300	0.38	0.02	275	0.40	0.02
Female	628	0.59	0.02	350	0.56	0.02	497	0.62	0.02	407	0.60	0.02
Missing	1	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Race/ Ethnicity	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Black	447	0.42	0.02	264	0.42	0.02	261	0.33	0.02	258	0.38	0.02
White	341	0.32	0.01	173	0.28	0.02	275	0.35	0.02	242	0.35	0.02
Hispanic	240	0.23	0.01	168	0.27	0.02	231	0.29	0.02	156	0.23	0.02
Other	30	0.03	0.01	21	0.03	0.01	28	0.04	0.01	26	0.04	0.01
Missing	0	0.00	0.00	0	0.00	0.00	2	0.00	0.00	0	0.00	0.00
Removed in Los Angeles	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Yes	445	0.42	0.02	282	0.45	0.02	318	0.40	0.02	230	0.34	0.02
Removed in a Rural County	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Yes												
CASE HISTORY												
Age at Exit	n	p	sd	n	p	sd	n	p	sd	n	p	sd
17	153	0.14	0.01	71	0.11	0.01	128	0.16	0.01	130	0.19	0.02
18	708	0.67	0.01	414	0.66	0.02	549	0.69	0.02	447	0.66	0.02
19	157	0.15	0.01	114	0.18	0.02	105	0.13	0.01	89	0.13	0.01
20 and older	40	0.04	0.01	27	0.04	0.01	15	0.02	0.00	16	0.02	0.01
Age at First Removal	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Ages 0-6	233	0.22	0.01	143	0.23	0.02	131	0.16	0.01	140	0.21	0.02
Ages 7-9	218	0.21	0.01	128	0.20	0.02	187	0.23	0.02	135	0.20	0.02
Ages 10 or 11	134	0.13	0.01	68	0.11	0.01	94	0.12	0.01	59	0.09	0.01
Ages 12 or 13	140	0.13	0.01	95	0.15	0.01	109	0.14	0.01	106	0.16	0.01
Ages 14 or 15	195	0.18	0.01	128	0.20	0.02	167	0.21	0.01	160	0.23	0.02
Ages 16 or 17	138	0.13	0.01	64	0.10	0.01	109	0.14	0.01	82	0.12	0.01
Reasons for Most Recent Removal	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Physical Abuse	132	0.12	0.01	79	0.13	0.01	86	0.11	0.01	88	0.13	0.01
Sexual Abuse	79	0.07	0.01	56	0.09	0.01	77	0.10	0.01	54	0.08	0.01
Neglect	623	0.59	0.02	356	0.57	0.02	451	0.57	0.02	392	0.57	0.02
Other	69	0.07	0.01	32	0.05	0.01	57	0.07	0.01	42	0.06	0.01
Missing	155	0.15	0.01	103	0.16	0.01	126	0.16	0.01	106	0.16	0.01

CALIFORNIA CONTINUED												
	NEVER CONNECTED			LATER CONNECTED			CONSISTENTLY CON-NECTED			INITIALLY CONNECTED		
Total Number of Episodes (Removals)	n	p	sd	n	p	sd	n	p	sd	n	p	sd
1	653	0.62	0.01	419	0.67	0.02	575	0.72	0.02	443	0.65	0.02
2	212	0.20	0.01	126	0.20	0.02	134	0.17	0.01	150	0.22	0.02
3	91	0.09	0.01	40	0.06	0.01	46	0.06	0.01	43	0.06	0.01
4	43	0.04	0.01	26	0.04	0.01	24	0.03	0.01	22	0.03	0.01
5 or more	59	0.06	0.01	15	0.02	0.01	18	0.02	0.01	24	0.04	0.01
Number of Placements (All Episodes)	mean	median	sd	mean	median	sd	mean	median	sd	mean	median	sd
	5.50	4.00	4.92	4.38	3.00	3.66	3.83	3.00	3.29	4.74	3.00	4.15
Cumulative Months in Out of Home Care	mean	median	sd	mean	median	sd	mean	median	sd	mean	median	sd
	84.82	79.00	49.19	87.59	79.00	49.62	81.61	76.00	49.19	82.14	70.00	49.88
Last Known Placement Type	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Foster Family Home - Relative	350	0.33	0.01	256	0.41	0.02	314	0.39	0.02	253	0.37	0.02
Foster Family Home - Non-Relative	273	0.26	0.01	203	0.32	0.02	265	0.33	0.02	226	0.33	0.02
Group Home/ Institution	373	0.35	0.01	120	0.19	0.02	143	0.18	0.01	147	0.22	0.02
Other	62	0.06	0.01	47	0.08	0.01	75	0.09	0.01	56	0.08	0.01
EMPLOYMENT CHARACTERISTICS												
Average Monthly Earnings at Age	mean	median	sd	mean	median	sd	mean	median	sd	mean	median	sd
16	4.75	0.00	49.50	8.04	0.00	90.33	28.79	0.00	189.17	23.15	0.00	126.17
17	11.85	0.00	91.25	9.50	0.00	32.44	130.50	0.00	882.49	86.39	0.00	261.13
18	21.07	0.00	63.31	27.77	0.00	120.04	231.51	88.65	638.04	184.35	72.18	342.86
19	28.75	0.00	75.45	92.80	18.67	150.95	529.89	417.43	584.08	372.04	252.34	445.92
20	22.43	0.00	78.16	185.34	50.07	295.59	868.23	734.96	1,016.77	443.42	265.51	511.81
21	17.50	0.00	110.28	284.55	104.68	427.10	1,095.92	963.24	1,335.99	290.02	106.82	464.78
22	13.44	0.00	79.98	463.32	235.64	587.29	1,249.23	1,040.79	1,372.69	163.45	4.93	325.72
23	9.16	0.00	55.78	580.00	368.87	631.47	1,434.28	1,270.23	1,173.17	90.52	0.00	252.94
24	24.13	0.00	134.47	742.16	487.30	798.57	1,579.91	1,374.93	1,379.10	154.34	0.00	407.18
Ever Employed for Four Consecutive Quarters as of Age	n	p	sd	n	p	sd	n	p	sd	n	p	sd
19	8	0.01	0.00	29	0.05	0.01	407	0.51	0.02	267	0.39	0.02
20	30	0.03	0.01	115	0.18	0.02	677	0.85	0.01	438	0.64	0.02
21	38	0.04	0.01	231	0.37	0.02	764	0.96	0.01	504	0.74	0.02
22	46	0.04	0.01	371	0.59	0.02	795	1.00	0.00	524	0.77	0.02
23	49	0.05	0.01	474	0.76	0.02	796	1.00	0.00	528	0.77	0.02
24	57	0.05	0.01	551	0.88	0.01	797	1.00	0.00	534	0.78	0.02
Total Number of Quarters Received TANF	mean	median	sd	mean	median	sd	mean	median	sd	mean	median	sd

CALIFORNIA CONTINUED												
	NEVER CONNECTED			LATER CONNECTED			CONSISTENTLY CONNECTED			INITIALLY CONNECTED		
Earned Fair Market Rent Income Level at Age	n	p	sd	n	p	sd	n	p	sd	n	p	sd
24	sample size too small to report			32	0.05	0.01	136	0.17	0.01	6	0.01	0.00
Probability of Employment at Age and Quarter	Predicted probability			Predicted probability			Predicted probability			Predicted probability		
Age 16-Q2	0.03			0.04			0.15			0.09		
Age 16-Q3	0.04			0.05			0.21			0.15		
Age 16-Q4	0.06			0.06			0.27			0.24		
Age 17-Q1	0.07			0.08			0.34			0.34		
Age 17-Q2	0.09			0.10			0.41			0.43		
Age 17-Q3	0.10			0.12			0.49			0.51		
Age 17-Q4	0.11			0.14			0.56			0.57		
Age 18-Q1	0.12			0.17			0.62			0.61		
Age 18-Q2	0.12			0.20			0.68			0.64		
Age 18-Q3	0.12			0.22			0.73			0.66		
Age 18-Q4	0.12			0.25			0.77			0.67		
Age 19-Q1	0.11			0.28			0.81			0.66		
Age 19-Q2	0.10			0.31			0.83			0.65		
Age 19-Q3	0.09			0.34			0.86			0.63		
Age 19-Q4	0.08			0.37			0.88			0.60		
Age 20-Q1	0.07			0.40			0.89			0.56		
Age 20-Q2	0.07			0.43			0.90			0.52		
Age 20-Q3	0.06			0.45			0.91			0.48		
Age 20-Q4	0.05			0.47			0.92			0.43		
Age 21-Q1	0.04			0.50			0.93			0.38		
Age 21-Q2	0.04			0.52			0.93			0.34		
Age 21-Q3	0.04			0.54			0.94			0.29		
Age 21-Q4	0.03			0.56			0.94			0.26		
Age 22-Q1	0.03			0.58			0.94			0.23		
Age 22-Q2	0.03			0.59			0.94			0.20		
Age 22-Q3	0.03			0.61			0.94			0.18		
Age 22-Q4	0.03			0.63			0.94			0.17		
Age 23-Q1	0.03			0.65			0.94			0.16		
Age 23-Q2	0.03			0.66			0.94			0.16		
Age 23-Q3	0.04			0.68			0.93			0.16		
Age 23-Q4	0.04			0.69			0.93			0.17		
Age 24-Q1	0.05			0.71			0.92			0.18		

Table A11. MN Trajectory Group Characteristics: Demographic, Case History, and Employment												
	NEVER CONNECTED			LATER CONNECTED			CONSISTENTLY CONNECTED			INITIALLY CONNECTED		
Sample Size	106			77			81			106		
DEMOGRAPHICS												
Gender	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Male	63	0.59	0.05	41	0.53	0.06	31	0.38	0.05	58	0.55	0.05
Female	43	0.41	0.05	36	0.47	0.06	50	0.62	0.05	48	0.45	0.05
Race/ Ethnicity	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Black	9	0.08	0.03	9	0.12	0.04	6	0.07	0.03	24	0.23	0.04
White	78	0.74	0.04	49	0.64	0.05	62	0.77	0.05	69	0.65	0.05
Asian or Pacific Islander	12	0.11	0.03	7	0.09	0.03	6	0.07	0.03	6	0.06	0.02
Other	7	0.07	0.02	12	0.16	0.04	7	0.09	0.03	6	0.06	0.02
Missing	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	1	0.01	0.01
Removed in Los Angeles	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Yes												
Removed in a Rural County	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Yes	73	0.69	0.04	49	0.64	0.05	40	0.49	0.06	46	0.43	0.05
CASE HISTORY												
Age at Exit	n	p	sd	n	p	sd	n	p	sd	n	p	sd
17	34	0.32	0.05	15	0.19	0.05	15	0.19	0.04	22	0.21	0.04
18	52	0.49	0.05	47	0.61	0.06	46	0.57	0.06	64	0.60	0.05
19 and older	20	0.19	0.04	15	0.19	0.05	20	0.25	0.05	20	0.19	0.04
Age at First Removal	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Ages 0-9	22	0.21	0.04	18	0.23	0.05	22	0.27	0.05	25	0.24	0.04
Ages 10 or 11	22	0.21	0.04	9	0.12	0.04	7	0.09	0.03	8	0.08	0.03
Ages 12 or 13	19	0.18	0.04	11	0.14	0.04	17	0.21	0.05	20	0.19	0.04
Ages 14 or 15	17	0.16	0.04	20	0.26	0.05	18	0.22	0.05	29	0.27	0.04
Ages 16 or 17	26	0.25	0.04	19	0.25	0.05	17	0.21	0.05	24	0.23	0.04
Reasons for Most Recent Removal	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Physical or Sexual Abuse	9	0.08	0.03	11	0.14	0.04	17	0.21	0.05	10	0.09	0.03
Neglect	38	0.36	0.05	34	0.44	0.06	41	0.51	0.06	46	0.43	0.05
Other	57	0.54	0.05	31	0.40	0.06	23	0.28	0.05	48	0.45	0.05
Missing	2	0.02	0.01	1	0.01	0.01	0	0.00	0.00	2	0.02	0.01

MINNESOTA CONTINUED												
	NEVER CONNECTED			LATER CONNECTED			CONSISTENTLY CONNECTED			INITIALLY CONNECTED		
Total Number of Episodes (Removals)	n	p	sd	n	p	sd	n	p	sd	n	p	sd
1 or more*	106	1.00	0.00	77	1.00	0.00	81	1.00	0.00	106	1.00	0.00
Number of Placements (All Episodes)	mean	median	sd	mean	median	sd	mean	median	sd	mean	median	sd
	4.97	3.00	4.20	6.51	5.00	5.88	4.53	4.00	4.17	6.42	4.50	5.96
Cumulative Months in Out of Home Care	mean	median	sd	mean	median	sd	mean	median	sd	mean	median	sd
	61.31	50.35	47.77	56.11	41.32	46.93	64.44	50.26	47.21	59.47	44.61	47.26
Last Known Placement Type	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Foster Family Home - Relative	12	0.11	0.03	11	0.14	0.04	11	0.14	0.04	12	0.11	0.03
Foster Family Home - Non-Relative	46	0.43	0.05	37	0.48	0.06	51	0.63	0.05	58	0.55	0.05
Other	43	0.41	0.05	24	0.31	0.05	16	0.20	0.04	27	0.25	0.04
Missing	5	0.05	0.02	5	0.06	0.03	3	0.04	0.02	9	0.08	0.03
EMPLOYMENT CHARACTERISTICS												
Average Monthly Earnings at Age	mean	median	sd	mean	median	sd	mean	median	sd	mean	median	sd
16	9.40	0.00	34.19	12.04	0.00	45.22	29.91	0.00	62.98	20.67	0.00	49.59
17	12.73	0.00	42.50	22.18	0.00	47.74	146.97	116.66	159.72	107.21	50.35	139.24
18	11.92	0.00	42.71	32.07	0.00	56.71	279.32	234.81	221.37	219.28	179.49	210.83
19	17.73	0.00	44.33	136.29	35.22	289.93	467.10	439.62	302.50	246.18	220.21	225.20
20	23.18	0.00	102.34	192.04	83.68	283.14	804.64	647.72	623.67	215.82	107.10	247.68
21	11.75	0.00	46.12	298.64	201.79	290.58	830.92	715.13	633.40	161.40	39.12	290.87
22	5.04	0.00	26.04	546.33	342.03	578.68	998.16	962.36	726.65	80.91	0.00	159.27
23	8.07	0.00	38.66	623.09	422.96	705.71	1,148.70	1,037.75	792.19	66.79	0.00	166.18
24	26.87	0.00	149.02	706.14	364.30	773.57	1,329.47	1,170.42	945.99	175.65	0.00	342.47
Ever Employed for Four Consecutive Quarters as of Age	n	p	sd	n	p	sd	n	p	sd	n	p	sd
24	sample size too small to report			70	0.91	0.03	81	1.00	0.00	68	0.64	0.05

MINNESOTA CONTINUED												
	NEVER CONNECTED			LATER CONNECTED			CONSISTENTLY CON-NECTED			INITIALLY CONNECTED		
Total Number of Quarters Received TANF	mean	median	sd	mean	median	sd	mean	median	sd	mean	median	sd
	0.11	0.00	1.17	0.27	0.00	1.70	0.23	0.00	1.65	0.36	0.00	2.42
Earned Fair Market Rent Income Level at Age	n	p	sd	n	p	sd	n	p	sd	n	p	sd
24	sample size too small to report			15	0.19	0.05	34	0.42	0.05	sample size too small to report		
Probability of Employment at Age and Quarter	Predicted probability			Predicted probability			Predicted probability			Predicted probability		
Age 16-Q2	0.07			0.12			0.33			0.34		
Age 16-Q3	0.08			0.13			0.43			0.43		
Age 16-Q4	0.09			0.13			0.52			0.50		
Age 17-Q1	0.10			0.14			0.60			0.56		
Age 17-Q2	0.10			0.15			0.67			0.61		
Age 17-Q3	0.10			0.16			0.73			0.64		
Age 17-Q4	0.10			0.17			0.77			0.65		
Age 18-Q1	0.10			0.18			0.80			0.66		
Age 18-Q2	0.09			0.20			0.82			0.66		
Age 18-Q3	0.09			0.21			0.84			0.65		
Age 18-Q4	0.08			0.23			0.85			0.63		
Age 19-Q1	0.08			0.25			0.86			0.60		
Age 19-Q2	0.07			0.28			0.87			0.57		
Age 19-Q3	0.06			0.30			0.88			0.53		
Age 19-Q4	0.06			0.33			0.88			0.49		
Age 20-Q1	0.05			0.35			0.88			0.45		
Age 20-Q2	0.05			0.38			0.88			0.40		
Age 20-Q3	0.04			0.40			0.88			0.36		
Age 20-Q4	0.04			0.43			0.88			0.32		
Age 21-Q1	0.04			0.45			0.88			0.28		
Age 21-Q2	0.03			0.47			0.87			0.25		
Age 21-Q3	0.03			0.49			0.87			0.22		
Age 21-Q4	0.03			0.50			0.87			0.20		
Age 22-Q1	0.03			0.52			0.87			0.19		
Age 22-Q2	0.03			0.52			0.87			0.18		
Age 22-Q3	0.03			0.53			0.87			0.17		
Age 22-Q4	0.04			0.53			0.87			0.18		
Age 23-Q1	0.04			0.53			0.88			0.18		
Age 23-Q2	0.05			0.52			0.88			0.20		
Age 23-Q3	0.05			0.50			0.89			0.22		
Age 23-Q4	0.07			0.48			0.90			0.26		
Age 24-Q1	0.08			0.46			0.91			0.32		

Table A12. NC Trajectory Group Characteristics: Demographic, Case History, and Employment															
	NEVER CONNECTED			LATER CONNECTED			CONSISTENTLY CONNECTED			INITIALLY CONNECTED-LOW			INITIALLY CONNECTED-HIGH		
Sample Size	76			54			57			97			63		
DEMOGRAPHICS															
Gender	n	p	sd	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Male	47	0.62	0.06	28	0.52	0.07	15	0.26	0.06	52	0.54	0.05	32	0.51	0.06
Female	29	0.38	0.06	26	0.48	0.07	42	0.74	0.06	45	0.46	0.05	31	0.49	0.06
Race/ Ethnicity	n	p	sd	n	p	sd	n	p	sd	n	p	sd	n	p	sd
White	37	0.49	0.06	22	0.41	0.07	29	0.51	0.07	44	0.45	0.05	28	0.44	0.06
Other	39	0.51	0.06	32	0.59	0.07	28	0.49	0.07	53	0.55	0.05	35	0.56	0.06
Removed in Los Angeles	n	p	sd	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Yes															
Removed in a Rural County	n	p	sd	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Yes	31	0.41	0.06	23	0.43	0.07	22	0.39	0.06	39	0.40	0.05	18	0.29	0.06
CASE HISTORY															
Age at Exit	n	p	sd	n	p	sd	n	p	sd	n	p	sd	n	p	sd
17-18	69	0.91	0.03	41	0.76	0.06	48	0.84	0.05	91	0.94	0.02	47	0.75	0.05
19-23	7	0.09	0.03	13	0.24	0.06	9	0.16	0.05	6	0.06	0.02	16	0.25	0.05
Age at First Removal	n	p	sd	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Ages 0-9	30	0.39	0.06	19	0.35	0.06	11	0.19	0.05	23	0.24	0.04	21	0.33	0.06
Ages 10 -13	24	0.32	0.05	21	0.39	0.07	18	0.32	0.06	25	0.26	0.04	17	0.27	0.06
Ages 14 or 15	12	0.16	0.04	7	0.13	0.05	14	0.25	0.06	27	0.28	0.05	15	0.24	0.05
Ages 16 or 17	10	0.13	0.04	7	0.13	0.05	14	0.25	0.06	22	0.23	0.04	10	0.16	0.05

NORTH CAROLINA CONTINUED															
	NEVER CONNECTED			LATER CONNECTED			CONSISTENTLY CONNECTED			INITIALLY CONNECTED-LOW			INITIALLY CONNECTED-HIGH		
Reasons for Most Recent Removal	n	p	sd	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Physical Abuse and Sexual Abuse	10	0.13	0.04	9	0.17	0.05	13	0.23	0.06	14	0.14	0.04	3	0.05	0.03
Neglect and Other	65	0.86	0.04	45	0.83	0.05	44	0.77	0.06	83	0.86	0.04	60	0.95	0.03
Missing	1	0.01	0.01	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Total Number of Episodes (Removals)	n	p	sd	n	p	sd	n	p	sd	n	p	sd	n	p	sd
1	62	0.82	0.04	46	0.85	0.05	47	0.82	0.05	85	0.88	0.03	52	0.83	0.05
2 or more	14	0.18	0.04	8	0.15	0.05	10	0.18	0.05	12	0.12	0.03	11	0.17	0.05
Number of Placements (All Episodes)	mean	median	sd	mean	median	sd	mean	median	sd	mean	median	sd	mean	median	sd
	8.99	6.00	8.22	7.24	6.00	5.04	7.67	6.00	5.98	10.02	8.00	7.62	7.86	6.00	6.49
Cumulative Months in Out of Home Care	mean	median	sd	mean	median	sd	mean	median	sd	mean	median	sd	mean	median	sd
	75.26	67.00	42.40	88.00	83.50	52.79	60.26	49.00	38.57	59.55	47.00	42.30	70.52	61.00	43.71
Last Known Placement Type	n	p	sd	n	p	sd	n	p	sd	n	p	sd	n	p	sd
Foster Family Home – Relative and Non-Relative	38	0.50	0.06	33	0.61	0.07	28	0.49	0.07	45	0.46	0.05	26	0.41	0.06
Group Home/ Institution	20	0.26	0.05	11	0.20	0.05	18	0.32	0.06	33	0.34	0.05	20	0.32	0.06
Other	18	0.24	0.05	10	0.19	0.05	11	0.19	0.05	19	0.20	0.04	17	0.27	0.06

NORTH CAROLINA CONTINUED															
	NEVER CONNECTED			LATER CONNECTED			CONSISTENTLY CONNECTED			INITIALLY CONNECTED-LOW			INITIALLY CONNECTED-HIGH		
EMPLOYMENT															
Average Monthly Earnings at Age (dollars):	mean	median	sd	mean	median	sd	mean	median	sd	mean	median	sd	mean	median	sd
16	2.94	0.00	22.36	18.11	0.00	61.70	72.93	0.00	206.35	58.70	0.00	185.89	55.06	0.00	154.43
17	0.73	0.00	4.64	36.69	0.00	75.47	173.71	85.65	277.84	92.25	5.03	204.11	95.63	36.50	131.24
18	5.35	0.00	24.39	71.91	28.55	113.77	280.20	255.03	251.43	109.86	71.33	157.37	302.05	186.12	414.61
19	2.84	0.00	15.59	145.25	42.50	206.18	519.70	425.02	387.77	119.90	50.67	186.79	359.71	253.24	407.55
20	2.18	0.00	16.38	234.12	63.16	367.11	671.97	554.75	484.53	78.86	9.33	165.32	413.65	292.73	386.92
21	0.09	0.00	0.82	316.44	100.66	407.93	860.27	793.04	573.87	28.48	0.00	92.90	471.28	382.14	469.36
22	0.00	0.00	0.00	571.05	423.37	535.01	946.02	789.24	660.11	41.56	0.00	105.99	422.64	242.68	767.53
23	0.00	0.00	0.00	751.37	571.21	709.27	1,079.19	844.61	816.40	21.73	0.00	108.99	193.20	39.60	401.04
24	1.69	0.00	14.75	905.27	805.56	803.23	1,071.04	868.27	876.49	67.48	0.00	191.94	183.54	17.41	463.64
Ever Employed for Four Consecutive Quarters as of Age	n	p	sd	n	p	sd	n	p	sd	n	p	sd	n	p	sd
19	0	0.00	0.00	14	0.26	0.06	45	0.79	0.05	25	0.26	0.04	44	0.70	0.06
20	0	0.00	0.00	27	0.50	0.07	52	0.91	0.04	26	0.27	0.04	54	0.86	0.04
21	0	0.00	0.00	35	0.65	0.06	56	0.98	0.02	27	0.28	0.05	57	0.90	0.04
22	0	0.00	0.00	46	0.85	0.05	57	1.00	0.00	31	0.32	0.05	59	0.94	0.03
23	0	0.00	0.00	53	0.98	0.02	57	1.00	0.00	32	0.33	0.05	59	0.94	0.03
24	0	0.00	0.00	53	0.98	0.02	57	1.00	0.00	33	0.34	0.05	59	0.94	0.03
Total Number of Quarters Received TANF	mean	median	sd	mean	median	sd	mean	median	sd	mean	median	sd	mean	median	sd
	0.01	0.00	0.11	0.91	0.00	2.80	0.81	0.00	2.38	1.19	0.00	3.44	1.41	0.00	3.44
Earned Fair Market Rent Income Level at Age	n	p	sd	n	p	sd	n	p	sd	n	p	sd	n	p	sd
24	0	0.00	0.00	13	0.24	0.06	13	0.23	0.06	0	0.00	0.00	sample size too small to report		

NORTH CAROLINA CONTINUED					
	NEVER CONNECTED	LATER CONNECTED	CONSISTENTLY CONNECTED	INITIALLY CONNECTED-LOW	INITIALLY CONNECTED-HIGH
Probability of Employment at Age and Quarter	Predicted probability	Predicted probability	Predicted probability	Predicted probability	Predicted probability
Age 16-Q2	0.00	0.12	0.37	0.22	0.22
Age 16-Q3	0.01	0.14	0.45	0.27	0.32
Age 16-Q4	0.01	0.16	0.52	0.32	0.42
Age 17-Q1	0.01	0.18	0.59	0.37	0.51
Age 17-Q2	0.02	0.21	0.65	0.40	0.59
Age 17-Q3	0.02	0.23	0.70	0.42	0.65
Age 17-Q4	0.02	0.25	0.74	0.43	0.70
Age 18-Q1	0.02	0.28	0.77	0.42	0.73
Age 18-Q2	0.02	0.30	0.80	0.41	0.76
Age 18-Q3	0.02	0.33	0.83	0.40	0.77
Age 18-Q4	0.02	0.35	0.84	0.37	0.78
Age 19-Q1	0.02	0.38	0.86	0.34	0.78
Age 19-Q2	0.01	0.40	0.87	0.31	0.78
Age 19-Q3	0.01	0.43	0.88	0.28	0.77
Age 19-Q4	0.01	0.46	0.89	0.25	0.76
Age 20-Q1	0.01	0.48	0.89	0.22	0.75
Age 20-Q2	0.00	0.51	0.90	0.19	0.72
Age 20-Q3	0.00	0.54	0.90	0.16	0.70
Age 20-Q4	0.00	0.56	0.90	0.14	0.67
Age 21-Q1	0.00	0.59	0.91	0.12	0.63
Age 21-Q2	0.00	0.62	0.91	0.11	0.59
Age 21-Q3	0.00	0.64	0.91	0.10	0.55
Age 21-Q4	0.00	0.67	0.91	0.09	0.51
Age 22-Q1	0.00	0.69	0.90	0.08	0.46
Age 22-Q2	0.00	0.72	0.90	0.08	0.42
Age 22-Q3	0.00	0.74	0.90	0.08	0.38
Age 22-Q4	0.00	0.77	0.90	0.08	0.34
Age 23-Q1	0.00	0.79	0.90	0.09	0.31
Age 23-Q2	0.00	0.81	0.90	0.10	0.28
Age 23-Q3	0.00	0.84	0.89	0.12	0.25
Age 23-Q4	0.00	0.86	0.89	0.14	0.23
Age 24-Q1	0.01	0.87	0.89	0.18	0.22

Table A13. CA: Comparing Age-Out Youth and Low-Income Youth on Employment Outcomes

	Employment		Earnings		Stability			
	Ever Employed at Age 24		Natural Logarithm of Mean Monthly Earnings at Age 24		'Relative Risk' of Achieving 4 Consecutive Quarters of Employment by Age 24		Employed Four Consecutive Quarters at Age 24	
Model type	Logistic		OLS		Hazard		Logistic	
Sample Size	46,094		46,094		47,685		46,094	
Intercept	0.29	***	0.52	***			1.14	***
Female	1.10	***	-0.06	***	1.01		1.07	***
African American (white, reference)	0.97		-0.04	**	0.76	***	0.62	***
Native American (white, reference)	0.72	***	-0.17	***	0.78	***	0.66	***
Asian (white, reference)	1.49	***	0.09	***	0.97	**	1.15	***
Hispanic (white, reference)	1.32	***	0.02		1.07	***	1.19	***
Los Angeles	1.16	***	0.02	**	0.99		1.02	
Prior Work Experience (before age 18)	1.38	***	0.06	***	1.43	***	1.96	***
Unemployment Rate at Discharge Year					0.98	***		
Unemployment Rate at Age 23-24	0.99	*	-0.01	***			0.95	***
Number of Quarters Employed by Age 23			0.02	***				
Number of Quarters Employed Ages 23-24			1.68	***				
Low-Income (Age Out, reference)	1.56	***	0.11	***	1.41	***	1.39	***

Notes: Estimates reported in logistic regression and hazard models are odds ratios.
Significance at the 10% level; ** significance at the 5% level; * significance at the 1% level.*

Table A14. MN: Comparing Age-Out Youth and Low-Income Youth on Employment Outcomes

	Employment		Earnings		Stability			
	Ever Employed at Age 24		Natural Logarithm of Mean Monthly Earnings at Age 24		'Relative Risk' of Achieving 4 Consecutive Quarters of Employment by Age 24		Employed Four Consecutive Quarters at Age 24	
Model Type	Logistic		OLS		Hazard		Logistic	
Sample Size	4,915		4,915		5,247		4,915	
Intercept	0.74	***	0.27	**			1.20	***
Female	1.26	***	-0.10	***	1.13	***	1.36	***
African American (white, reference)	0.72	***	0.04		0.61	***	0.37	***
Other Race/Ethnicity (Non-White) (white, reference)	1.06		0.20	***	0.76	***	0.61	***
Rural	0.78	***	-0.04		0.82	***	0.68	***
Prior Work Experience (before age 18)	1.23	***	0.04		1.40	***	1.68	***
Unemployment Rate at Discharge Year					1.00			
Unemployment Rate at Age 23-24	0.96		0.00				0.93	
Number of Quarters Employed by Age 23			0.02	***				
Number of Quarters Employed Ages 23-24			1.69	***				
Low-Income (Age Out, reference)	1.30	**	0.17	***	1.45	***	1.66	***

Notes: Estimates reported in logistic regression and hazard models are odds ratios.
Significance at the 10% level; ** significance at the 5% level; * significance at the 1% level.*

Table A15. NC: Comparing Age-Out Youth and Low-Income Youth on Employment Outcomes

	Employment		Earnings		Stability			
	Ever Employed at Age 24		Natural Logarithm of Mean Monthly Earnings at Age 24		'Relative Risk' of Achieving 4 Consecutive Quarters of Employment by Age 24		Employed Four Consecutive Quarters at Age 24	
Model Type	Logistic		OLS		Hazard		Logistic	
Sample Size	2,993		2,993		3,252		2,993	
Intercept	-0.56	**	0.42	***			-1.66	***
Female	1.81	***	-0.04		1.39	***	1.44	***
African American (white, reference)	1.17		-0.06		0.93		0.99	
Other Race/Ethnicity (Non-White) (white, reference)	0.97		-0.04		0.92		1.04	
Rural	1.01		-0.03		1.05		1.12	
Prior Work Experience (before age 18)	1.19	***	-0.01		1.25	***	1.23	***
Unemployment Rate at Discharge Year					1.00			
Unemployment Rate at Age 23-24	1.08	**	0.01				1.04	
Number of Quarters Employed by Age 23			0.02	***				
Number of Quarters Employed Ages 23-24			1.66	***				
Low-Income (Age Out, reference)	1.24		0.04		1.18	**	1.43	**

Notes: Estimates reported in logistic regression and hazard models are odds ratios.
Significance at the 10% level; ** significance at the 5% level; * significance at the 1% level.*

Table A16. CA: The Role of Child Welfare Factors in the Employment Experiences of Age-Out Youth

	Employment		Earnings		Stability			
	Ever Employed at Age 24		Natural Logarithm of Mean Monthly Earnings at Age 24		'Relative Risk' of Achieving 4 Consecutive Quarters of Employment by Age 24		Employed Four Consecutive Quarters at Age 24	
Model Type	Logistic		OLS		Hazard		Logistic	
Sample size	2,690		2,690		3,156		2,690	
Intercept	1.14		0.73				2.07	
Age at Discharge	0.98		-0.02		1.00		0.97	
Female	0.96		-0.04		0.97		0.88	
African American (white, reference)	1.05		0.01		0.87	**	0.82	*
Native American (white, reference)	1.06		-0.03		0.75		0.87	
Asian (white reference)	1.25		0.10		1.34	**	3.44	***
Hispanic (white, reference)	1.20	*	0.01		1.07		1.18	
Los Angeles	1.36	***	0.07		0.98		1.03	
Physical Abuse (neglect, reference)	0.96		-0.06		1.07		1.31	*
Sexual Abuse (neglect, reference)	1.24		0.03		1.08		1.18	
Other Abuse (neglect, reference)	0.99		-0.07		1.01		0.97	
Foster Home – Relative (foster home—non-relative, reference)	1.02		-0.07		0.86	**	0.74	**
Group Home (foster home—non-relative, reference)	0.69	***	-0.14	**	0.64	***	0.53	***
Unspecified Exit (foster home—non-relative, reference)	0.68	***	-0.14	*	0.66	***	0.50	***
Other (foster home—non-relative, reference)	0.99		-0.21	***	1.05		1.15	
Total Number of Episodes	0.96		0.02		0.99		0.99	
Total Placements	0.96		-0.02		0.99		0.95	*
Total Placements, Squared	1.00		0.00		1.00		1.00	
Months in Care	1.00		0.00		1.00		1.00	
Prior Work Experience	1.42	***	0.03		1.78	***	1.91	***
Unemployment Rate at Discharge Year					0.98	**		
Unemployment Rate at Age 23-24	0.98		0.01				0.98	
Number of Quarters Employed by Age 23			0.02	***				
Number of Quarters Employed Ages 23-24			1.71	***				

Notes: Estimates reported in logistic regression and hazard models are odds ratios.
Significance at the 10% level; ** significance at the 5% level; * significance at the 1% level.*

Table A17. MN: The Role of Child Welfare Factors in the Employment Experiences of Age-Out Youth

	Employment		Earnings		Stability			
	Ever Employed at Age 24		Natural Logarithm of Mean Monthly Earnings at Age 24		'Relative Risk' of Achieving 4 Consecutive Quarters of Employment by Age 24		Employed Four Consecutive Quarters at Age 24	
Model Type	Logistic		OLS		Hazard		Logistic	
Sample size	306		309		358		309	
Intercept	0.26		-2.82				-5.84	
Age at Discharge	1.01		0.10		1.22	**	1.38	
Female	1.71	**	-0.38	***	1.21		1.60	*
African American (white, reference)	1.06		0.45	**	0.83		0.85	
Other Race/Ethnicity (Non-White) (white, reference)	1.06		0.08		0.91		0.89	
Rural	2.34	***	0.23		0.84		1.72	*
Physical Abuse (neglect, reference)	1.39		0.03		1.32		1.19	
Sexual Abuse (neglect, reference)	0.25	***	-0.24		1.10		0.90	
Foster Home – Relative (foster home—non-relative, reference)	0.93		0.23		0.96		1.23	
Group Home (foster home—non-relative, reference)	0.57		-0.18		0.83		0.73	
Supervised Independent Living (foster home—non-relative, reference)	0.89		-0.24		1.01		0.94	
Unspecified Exit (foster home—non-relative, reference)	0.42		-0.12		1.00		0.86	
Other (foster home—non-relative, reference)	1.58		-0.89	***	0.47	**	0.52	
Total Number of Episodes			0.84	*	1.10		1.20	
Total Placements	0.87	**	-0.01		0.97		0.90	
Total Placements, Squared	1.00		0.00		1.00		1.00	
Months in Care	1.01		0.00		1.00		1.00	
Prior Work Experience	1.26		0.26	*	1.75	***	1.45	
Unemployment Rate at Discharge Year					1.07			
Unemployment Rate at Age 23-24	0.94		0.01				1.03	
Number of Quarters Employed by Age 23			0.08	***				
Number of Quarters Employed Ages 23-24			1.56	***				

Notes: Estimates reported in logistic regression and hazard models are odds ratios.
Significance at the 10% level; ** significance at the 5% level; * significance at the 1% level.*

Table A18. NC: The Role of Child Welfare Factors in the Employment Experiences of Age-Out Youth

	Employment		Earnings		Stability			
	Ever Employed at Age 24		Natural Logarithm of Mean Monthly Earnings at Age 24		'Relative Risk' of Achieving 4 Consecutive Quarters of Employment by Age 24		Employed Four Consecutive Quarters at Age 24	
Model Type	Logistic		OLS		Hazard		Logistic	
Sample size	284		284		347		284	
Intercept	0.71		-0.50				-3.08	
Age at Discharge	0.98		0.04		1.24	**	1.15	
Female	1.44		-0.09		1.38	**	1.68	*
African American (white, reference)	0.97		-0.02		1.05		0.66	
Other Race/Ethnicity (Non-White) (white, reference)	0.80		0.02		1.59	*	1.16	
Rural	0.98		-0.08		0.95		0.88	
Physical Abuse (neglect, reference)	1.13		0.15		1.31		1.26	
Sexual Abuse (neglect, reference)	1.72		-0.34		0.75		1.14	
Other Abuse (neglect, reference)	0.51	*	-0.09		0.91		0.73	
Foster Home – Relative (foster home—non-relative, reference)	0.90		0.00		0.69		0.78	
Group Home (foster home—non-relative, reference)	0.72		-0.17		0.99		0.78	
Supervised Independent Living (foster home—non-relative, reference)	1.29		-0.02		1.04		0.73	
Unspecified Exit (foster home—non-relative, reference)	0.61		0.01		0.83		0.65	
Other (foster home—non-relative, reference)	0.94		0.01		0.81		0.51	
Total Number of Episodes	1.38		0.09		1.14		1.30	
Total Placements	0.97		-0.01		0.98		0.96	
Total Placements, Squared	1.00		0.00		1.00		1.00	
Months in Care	1.01		-0.00		1.00		1.01	
Prior Work Experience	1.14		0.03		1.27	***	1.13	
Unemployment Rate at Discharge Year					0.99			
Unemployment Rate at Age 23-24	0.92		0.04				0.86	
Number of Quarters Employed by Age 23			0.02					
Number of Quarters Employed Ages 23-24			1.68	***				

Notes: Estimates reported in logistic regression and hazard models are odds ratios.
Significance at the 10% level; ** significance at the 5% level; * significance at the 1% level.*

Table A19. NLSY97: Demographic & Employment Characteristics All youth age 18 in 1998 observed through their 24th birthday (weighted)			
Sample Size	878		
DEMOGRAPHICS			
Gender	n	p	sd
Male	414	0.51	0.50
Female	464	0.49	0.50
Race/ Ethnicity	n	p	sd
Black	245	0.15	0.36
White	461	0.67	0.47
Native American	3	0.01	0.07
Asian or Pacific Islander	16	0.03	0.16
Hispanic	185	0.13	0.34
Other (includes multiracial)	8	0.01	0.11
EMPLOYMENT			
Average monthly earnings at age (dollars):	mean	median	sd
16	75	0	141
17	175	97	207
18	328	219	358
19	475	352	443
20	726	592	604
21	916	757	766
22	1024	854	869
23	1223	1107	997
24	1536	1398	1291
Ever employed at age:	n	p	sd
16	354	0.46	0.50
17	542	0.68	0.47
18	625	0.76	0.43
19	742	0.87	0.34
20	862	0.99	0.12
21	805	0.93	0.26
22	794	0.92	0.27
23	790	0.91	0.28
24	792	0.92	0.28
Number of quarters employed at age:	mean	median	sd
16	1.09	0	1.46
17	1.94	2	1.63
18	2.37	3	1.65
19	2.83	4	1.44
20	3.35	4	1.04
21	3.29	4	1.21
22	3.3	4	1.25
23	3.31	4	1.29
24	3.36	4	1.25
Ever employed for four consecutive quarters as of age:	n	p	sd
19	386	0.48	0.50
20	597	0.71	0.46
21	729	0.85	0.36
22	769	0.89	0.31
23	797	0.92	0.27
24	822	0.95	0.23
Receipt of TANF at age:	n	p	sd
19	24	0.02	0.12
20	9	0.01	0.09
21	9	0.01	0.08
22	14	0.01	0.11
23	13	0.01	0.10
24	8	0.01	0.08