Investigating Alternative Sources of Quarterly Wage Data

An Overview of the NDNH, LEHD, WRIS, and ADARE

By Christin Durham and Laura Wheaton

October 18, 2012*

*This report was prepared by the Urban Institute under contract number GS23F8198H, order number HHSP233200800561G. The views expressed here are those of the authors and should not be attributed to the Urban Institute, its trustees, or HHS/ACF. We would like to thank Greg Acs, Theresa Anderson, Joshua Mitchell, David Stevens, and Stephen Wandner for review and comments.

Introduction

State Unemployment Insurance (UI) program quarterly wage data have often been linked with other state administrative data to analyze the earnings of current and former recipients of government assistance programs.[1] Although a state's UI wage data captures the wages of most workers in a state, some workers are excluded, such as those who work in a neighboring state, have moved out of state, or are of interest to a study but do not necessarily live in the state (such as the noncustodial parent in a child support case). Federal employees, ex-service members, and postal workers are also not included in state UI wage data.[2] As a result, researchers sometimes turn to data sources that provide access to quarterly wage data beyond what is available in a single state.

The purpose of this report is to identify sources of multi-state quarterly wage data that have or could be used for research purposes. This document focuses on four current and potential resources: the Office of Child Support Enforcement's National Directory of New Hires, the U.S. Census Bureau's Longitudinal Employer-Household Dynamics program, the U.S. Department of Labor's Wage Record Interchange System, and the Administrative Data Research and Evaluation project, which is managed by the Jacob France Institute at the University of Baltimore.

The quarterly wage data underlying these four sources present some challenges for research. While approximately 97 percent of wage and salary workers are in UI covered employment (BLS 2011), the data do not cover the self-employed or persons working "under the table." Data are reported as quarterly amounts, complicating analyses where monthly earnings are of interest. As will be noted in the discussion, some data sources provide information about federal employees, while others do not. Despite these limitations, state UI wage data provide key information to many research studies. This report focuses on the role of various data sources in extending the advantages of state UI wage data to studies requiring information on earnings in other states.

Each of the sources described here was designed for a particular purpose and has strict requirements regarding permitted uses of the data and rules for preserving confidentiality. For each source, we provide an overview of the project's purpose and design, discuss the rules surrounding accessing information from the source, and provide an overview of research utilizing the source, where available. The information presented here represents our best understanding of these issues based on the information currently available to us. However, rules and practices regarding access to administrative data are constantly evolving, and we strongly recommend that any project considering use of a particular data source contact the data providers early in the planning process to obtain complete and up-to-date information regarding the content of the data and rules for obtaining access.

[1] Social Security and IRS wage data are also key sources of earnings information used for research, but these sources are not quarterly. Additionally, Social Security wage data excludes some of the earnings captured by UI wage data.

[2] However, these data are available from the Federal Employment Data Exchange System.

National Directory of New Hires

The National Directory of New Hires (NDNH) is a database established by the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) for the primary purpose of child support enforcement. The original legislation also granted state welfare agencies access to the data "to carry out their responsibilities under Part A of the Social Security Act.[3]" Since its enactment, access to the NDNH has been expanded six times to include additional agencies, primarily for the prevention of fraud and abuse (Solomon-Fears 2011). The NDNH contains data on newly hired individuals (obtained from W-4 forms), quarterly wages reported by employers to the UI system, and UI applications and benefits (OCSE 2009). The NDNH is part of the Automated Information Systems for Child Support Enforcement, which automatically links NDNH data to Child Support Enforcement (CSE) data. This connection has significantly increased the likelihood of single mothers to collect financial support from delinquent fathers (Kim 2007).

Information for the NDNH is assembled from state and federal sources. For each new hire, employers are required to provide a report to the state in which they operate, containing the name, address, and Social Security number (SSN) of every new employee, along with the employer's name, address, and tax identification number. The state agency in charge of maintaining this information enters the data into a State Directory of New Hires (SDNH). The SDNH data are then supplied by the agency to the NDNH (Solomon-Fears 2011). State Work Force Agencies (SWA) are responsible for collecting and managing UI quarterly wage and UI benefit data. Each SWA regularly transmits its new hire and wage/benefit data to OCSE for inclusion in the NDNH. Data on federal employment are obtained from the federal government.

The primary reason for state CSE agencies to use NDNH data instead of state new hire data or state quarterly wage data is the potential to acquire earnings information about noncustodial parents who have obtained work or claimed UI benefits in a different state, or who are employed by the federal government. Approximately 30 percent of child support cases involve a noncustodial parent living and/or working in a state different from that of the dependent child (Solomon-Fears 2011). Additionally, noncustodial parents often find temporary employment, change jobs, or change job locations. Multi-state employers such as Wal-Mart are allowed to submit all of their new hires data to a single state agency, making the NDNH particularly useful for identifying new employment by interstate companies who report their New hires data to another state (Higgins and Martin 2009).

In order to protect the privacy of individuals in the NDNH, federal law requires that OCSE restrict access to the NDNH database to authorized persons for authorized purposes. All information entered into the NDNH is purged within 24 months. Wage and unemployment data that do not result in a child support match are often purged within 12 months (Turetsky 2008), although OCSE is permitted to retain data that is part of an ongoing research sample.

[3] S.S. Act 453 (j)(3)

Accessing the NDNH for Research

Federal law permits researchers to access NDNH data without identifiers for child support or welfare related research purposes "found by the Secretary of HHS to be likely to contribute to achieving the purposes of Part A or Part D of the Social Security Act. [4]" The researcher must have the support of a state or federal agency that can grant access to the child support or welfare data to be linked with the NDNH. Upon completion of a match agreement and transmittal of the child support or welfare research file to OCSE, OCSE links the datasets and returns the research file with attached NDNH data as a de-identified file.

Federal law requires that users of NDNH matched data reimburse OCSE for the costs of providing the data. OCSE sets rates according to a formula that takes into account three factors: (1) an access fee (split evenly across NDNH users); (2) the frequency of matches; and (3) the direct cost of performing the match.[5] Because the access fee is split evenly across NDNH users, the cost of a match varies with the number of users accessing the NDNH data.

Shortcomings of the NDNH for many analyses include a lack of longitudinal data beyond one or two years, and the inability to obtain identified data for research purposes. A one or two year time span provides a relatively limited window for observing earnings before, during, and after the time of program participation. Data of particular interest may have already been deleted before a research agreement can be reached. In the absence of identifiers, it is impossible for researchers to incorporate additional years or sources of administrative data into their research sample or correct problems with prior linkages once the de-identified file with NDNH data has been returned. While it is possible to construct a longitudinal research sample in the future, this requires greater involvement by OCSE (since only OCSE has access to the identifiers needed to continue updating the earnings data), increasing the cost and complexity of the project.

Uncertainty over potential costs also presents challenges to researchers considering an NDNH match. In a Temporary Assistance for Needy Families (TANF) related project funded by the HHS Administration for Children and Families (ACF), a state researcher who submitted a match request in October 2009 was unable to obtain a cost estimate for a NDNH match until six months into the negotiation (Wheaton, Durham, and Loprest 2012).

Overview of Research Using the NDNH

Although NDNH restrictions present challenges for certain types of analyses, the NDNH has been and continues to be used for program evaluation and research purposes. Examples include studies examining the employment and earnings patterns of TANF and former TANF recipients, assess the effectiveness of various employment and training

[4] S.S. Act 453 (j)(5)

[5] See "A Guide to the National Directory of Hires" for more information about this formula: http://archive.acf.hhs.gov/programs/cse/newhire/library/ndnh/background_guide.pdf.

programs, and analyze labor market outcomes of noncustodial parents. Data from the NDNH were also used to determine which state TANF programs were awarded High Performance Bonuses (HPB).

A 2001 study in Texas examined several child support collection strategies, aimed at increasing the total amount of child support collected from noncustodial parents. This included estimating the effects of increasing TANF pass-through amounts, which is the amount of child support money collected that is given to TANF families (not retained by federal or local government). The study's research data set was created by linking Texas Office of the Attorney General's child support case and collections data, wage data from the Texas UI wage data system, wage data from the NDNH, and local TANF records for a period spanning January 1998 to August 2000 (Schexnayder et al. 2001).

A study of TANF leavers in the District of Columbia (Acs and Loprest 2001) was the first project outside of child support research to gain access to NDNH data. The study used employment and earnings data from the NDNH to supplement information from DC's Automated Computer Eligibility Determination System (ACEDS). The study examined data on families that exited TANF in the last quarter of 1997 and families that exited TANF in the last quarter of 1998.

ACF uses NDNH data to measure employment outcomes for adult TANF recipients in the areas of job entry, job retention, and earnings gains. Job entry is measured by examining adult TANF recipients employed in a quarter with no earnings in the previous quarter. Job retention is measured by looking at adult TANF recipients working in one quarter and then also working in the next two quarters. Earnings gains are measured by comparing first and third quarter earnings of adult TANF recipients working in three consecutive quarters (Higgins and Martin 2009). For a study examining TANF program performance standards in the state of Wisconsin (Pancook 2006), NDNH data was linked to state UI data, state TANF records, state administrative records, and survey data to measure employment retention and examine the percentage of TANF recipients required to work for earnings.

The PRWORA authorized payment of HPBs to states with exceptional TANF programs based on criteria established by HHS. HPB awards were made from federal fiscal year 1998 through 2004, but the awards ceased when funding was eliminated with the reauthorization of TANF in 2005 (ACF 2009). The reliability of HPB data as a source of information on the efficacy of state TANF programs improved over time, mainly due to the shift of responsibility for performance assessment from the states to the federal government, which used information from the NDNH (Wiseman 2007). Beginning in federal fiscal year 2001, states were required to submit monthly lists of TANF recipient SSNs for a match with the NDNH, enabling more consistent employment information across the states and creating a more level playing field for HPB competition (Wandner and Wiseman 2011).

NDNH data was utilized under the HHS Enhanced Services for the Hard-to-Employ project to examine the effectiveness of the Transitional Work Corporation (TWC) in

Philadelphia, an employment assistance program targeting potential and long-term welfare recipients. The project measured immediate employment and earnings (while in the TWC program) as well as long-term employment and earnings (post-TWC program) by linking program payroll records to NDNH data to obtain quarterly employment and earnings (Redcross 2009). A major purpose of the TWC research was to assess the effectiveness of the transitional jobs model, which attempts to overcome barriers to employment by providing individuals with a wage-paying short-term job that combines real work, skills development, and supportive services to successfully transition participants into the labor market.[6] Use of NDNH data made it possible to accurately estimate the proportion of participants employed in jobs covered by UI and to calculate average earnings for six consecutive quarters (Bloom et al. 2009).

A similar study under the Enhanced Services for the Hard-to-Employ project assessed the impacts of the Center for Employment Opportunities (CEO), an employment program for ex-prisoners in New York City (Redcross et al. 2009). The employment and earnings of CEO participants was examined using data from NDNH, the New York State Department of Labor, New York State UI data, and CEO payroll data. The project was able to accurately estimate the proportion of CEO members employed at UI-covered jobs for at least one day in each quarter over two years. Final findings from this study are reported in a November 2011 research article in *Criminology & Public Policy* (Zweig et al. 2011).

Another study recently reported interim results from an evaluation of programs in Kansas and Missouri, aimed at dually addressing the employment and educational needs of low-income parents either expecting a child or with a child under the age of three using a two-generational, child-focused model (Hsueh et al. 2011). Program effects are assessed by looking at 610 families randomly assigned to either the program group, receiving the enhanced two-generational program, or the control group, accessing alternative sources of assistance in the community.

Research weighing the impacts of additional child support payments from noncustodial parents on poverty reduction and TANF exit in the state of Texas found that use of NDNH data can make a significant difference in observed labor market outcomes for noncustodial parents. State UI wage records were supplemented with employment and earnings data from the NDNH. The study revealed that the absence of out-of-state employment data in previous child support research for Texas was a significant limitation. Supplementing 1998-99 Texas UI wage records with NDNH data for Texas noncustodial parents resulted in figures 17 percent higher for employment and 28 percent higher for earnings (King 2003).

Longitudinal Employer Household Dynamics

The Longitudinal Employer-Household Dynamics (LEHD) program operates within the U.S. Census Bureau, combining federal and state administrative data on employers and employees and performing linkages of the resulting database with censuses and surveys,

[6] Definition of the transitional jobs model by the National Transitional Jobs Network (Redcross 2009).

such as the Current Population Survey and the Survey of Income and Program Participation (Census 2011a). The LEHD is the primary source of data for the Local Employment Dynamics (LED) program that provides states and localities with data on local labor market conditions, including the Quarterly Workforce Indicators (QWI). The QWI contain economic indicators, such as employment, job creation, wages, and work turnover, at different geographic levels, and also by industry, age, and gender of workers. The QWI are aggregate data that can be viewed online and downloaded for further analysis. Additionally, the Census uses the LEHD to produce OnTheMap, a web-based mapping and reporting application providing tools to quantify and visualize spatio-temporal labor market dynamics (Pitts 2010, Abowd 2010).[7]

The LEHD contains data from voluntary LED partner states. Ten states—California, Florida, Illinois, Maryland, Minnesota, North Carolina, New Jersey, Oregon, Pennsylvania, and Texas—participated at the project's inception (U.S. Census Bureau 2002). Currently, all states and the District of Columbia participate as LED partners, with the exception of Massachusetts. However, data for Massachusetts, Puerto Rico and the Virgin Islands are currently pending production (Census 2011b). The longitudinal nature of the LEHD data allows for following individual workers over time and across states. Historical data are maintained and usually extend back to the point at which a state began participating in the LED (the earliest records date back to 1990). Federal employment information is generally not included in the LEHD.

The LEHD combines state UI wage data with employer-level data from the ES-202 program (which contains the data reported to the Bureau of Labor Statistics as part of the Quarterly Census of Employment and Wages). Demographic information such as sex, date of birth, place of birth, citizenship, and race is obtained primarily from the Social Security Administration. Place of residence is obtained from the Census Bureau's Statistical Administrative Records System. The LEHD can be linked to Census Bureau surveys such as the Survey of Income and Program Participation (SIPP) and the Current Population Survey to provide greater information on the subsets of individuals in those surveys (Abowd et al 2005). There appears to have been little linkage of LEHD with other administrative data, although one three-state research study linked UI wage records from the LEHD with state administrative child care subsidy and TANF data, as well as with data from the U.S. Census Bureau's American Community Survey/Supplemental Survey data (Goerge 2009).

Accessing the LEHD for Research

All research projects seeking access to LEHD microdata must perform the work on-site at one of the Census Bureau's thirteen Research Data Centers (RDCs) and must meet the general requirements for research at an RDC:[8]

[7] For more information about OnTheMap, see http://lehd.ces.census.gov/datatools/doc/OnTheMapOnePager.pdf.

[8] RDC locations and research requirements are listed on the U.S. Census Bureau Center for Economic Studies webpage "Census Bureau Research Data Center Research Proposal Guidelines" at https://www.ces.census.gov/index.php/ces/researchguidelines.

- The project must demonstrate that the work conducted will most likely benefit Census Bureau programs.
- The project must demonstrate a clear need for non-public data.
- The proposal must show that the research can be conducted successfully with the methodology and requested data.
- Output from all research projects must undergo and pass a disclosure review.
- Access to the data may require payment of user fees and there may be additional costs for special data processing or linking of datasets.
- Use of Federal Tax Information data components requires approval from the IRS.

In addition to meeting the general RDC access requirements, the project must meet requirements specific to the LEHD (McKinney and Vilhuber 2008):

- States included in the study must agree to use of their data in the RDC. As of February, 1, 2008, 30 states had granted permission and the LEHD was continuing to work on expanding the list of permissions.
- In order to report results from an individual state or sub-state area, permission must be obtained from the state.
- If a research study pools data from multiple states, the included states can be named and state-specific controls can be included, but the coefficients cannot be reported.

Researchers interested in linking other administrative data sources to the LEHD should note that no SSNs are included in the LEHD. SSNs are replaced with the Census Bureau's Protected Identity Key. Therefore, incorporating additional sources of administrative data would likely require a higher-level negotiation than is required to obtain access to LEHD data at an RDC.

LEHD program data have are used for a variety of projects ranging from single-state data labor market studies to multi-state data employee relocation studies. Much of the research utilizing the LEHD has involved Census Bureau authors or associates of educational institutions housing an RDC.

Overview of Research Using the LEHD

LEHD microdata have been used in a number of studies examining characteristics and outcomes pertaining to low-wage workers and their employers in several states. Studies led by Fredrik Andersson analyzed long-term low wage earners in five states, employer characteristics in eight states, immigrant labor market outcomes in twelve metropolitan areas, and spatial wage differences in two states (Andersson et al. 2002, 2003a, 2003b, 2004, 2005, 2009). Projects headed by John Abowd used LEHD data from 1992, 1997, and 1990-2000 to study the distribution of human capital in one state and to measure observable and unobservable worker characteristics in seven states (Abowd et. al. 2001, 2003). Two studies focused on instability in male earnings (Celik et al. 2009, Gottschalk et al. 2008). Four additional projects included analyses of employer-to-employer flows in

three states (Bjelland et al. 2007), job reallocation (Golan et. al. 2007), how entry into low-wage adult status is associated with changes in employer characteristics (Holzer 2002), and how wages are affected by coworker characteristics (Lengermann 2002). A project headed by Robert Goerge examined employment outcomes for low-income families receiving child care (Goerge 2009).

Bruce Fallick led a study using LEHD data from four large states over the period 1991Q3–2003Q4 that examined full distributions of outcomes from job separations, differences between job-to-job transitions versus spells of joblessness between jobs, differences between workers who remain in the same industry versus industry switches, and how business cycles impact the distribution of earnings and employment outcomes for workers who experience separations (Fallick et al.2008). David Stevens authored a technical paper describing the Employment Dynamics Estimates Project, which is part of the LEHD (Stevens 2002). Another LEHD technical paper developed a matching model with heterogeneous workers, firms, and work-firm matches and applied it to longitudinal linked data on employers and employees from two states (Woodcock 2002).

Publications released in 2010 extended the LEHD into new research areas. Ted Mouw of the University of North Carolina at Chapel Hill headed a project examining the effects of immigration on the wages of native workers (Mouw and Kalleburg 2010). Dissertation work at the University of Minnesota's Center for Transportation Studies utilized LEHD and other census data to examine the possible roles played by work and home/neighborhood social networks in an individual's ability to obtain a residence and employment in the state of Minnesota (Tilahun 2010). LEHD data were used to examine how compensation structure affects employee mobility and entrepreneurship (Carnahan et al. 2010), and Juhn and McCue (2010) linked LEHD UI earnings records with SIPP data to identify differences in work history and earnings information. Another study integrated LEHD data with firm-level information to identify job loss events that are independent of worker characteristics, such as a firm shutting down or having a mass layoff (Andersson et al. 2010). Andersson continued with similar research in 2011, examining the importance of spatial factors in the job searches and employment outcomes of low-wage workers. The LEHD was also used for work studying how endogenous mobility impacts the ability to accurately measure the effects of wage decomposition (Abowd et al. 2010).

The number of LEHD publications continued to grow in 2011. Studies using the LEHD included analysis of the earnings of rural manufacturing workers (Tolbert and Blanchard 2011), estimation of the labor market consequences of corporate diversification (Tate and Yang 2011), examination of the employment and wage consequences of job separation (Fallick et al. 2011), and study of the relationship between certain employer workforce demographics and work hour flexibility as it pertains to older worker job separation (Blau and Shvydklo 2011). The LEHD was also used to explore the extent to which people's work locations are similar to their neighbors' (Tilahun and Levinson 2011), as well as to examine patterns of participation in neighborhood council board elections in Los Angeles (Houston and Ong 2011). Another 2011 project (Barth et al.2011) used LEHD data to calculate the role of employers versus workers in shaping wage distribution for a sub-set

of states from 1992-2002. Hampshire and Gaites (2011) used LEHD data to develop a methodology assessing market feasibility and economic incentives of peer-to-peer carsharing. LEHD data were also used to compute firm-level measures of labor market power (Webber 2011). A book by Harry Holzer, Julia Lan, David Rosenblum, and Fredric Andersson (2011) used LEHD data for twelve states to analyze the creation of good jobs over time and the skills needed to obtain them. A paper published in early 2012 (Freedman et al. 2012) investigated how worker and firm reallocation contributed to shifts in earnings inequalities within and across industries between 1992 and 2003.

Wage Record Interchange System[9]

The Wage Record Interchange System (WRIS) was developed by the U.S. Department of Labor (DOL) and the SWAs to facilitate the exchange of wage data between partnering states for the purpose of improving the determination of monetary entitlement to UI benefits for unemployed workers who have worked in another state or in more than one state. This role was expanded with the enactment of the Workforce Investment Act of 1998 (WIA) that requires states to measure their program performance using unemployment insurance wage records. States voluntarily participate in the WRIS, which assists with 1) the exchange of wage data for UI benefit payment purposes, and 2) assessing the performance of employment and training programs and providers and offering technical support to states for preparing and submitting program performance reports to DOL.

WRIS also supports research and evaluation efforts authorized under the terms defined in the WRIS Data Sharing Agreement. The WRIS exchange allows state workforce program performance agencies to access the wage information of individuals who participated in workforce investment programs in one state, then began employment in a different state, or are employed in more than one state. Participating in WRIS can give states a better picture of the effectiveness of their workforce investment programs, thereby enabling them to weigh more accurate outcomes against their program performance measures (GAO 2010).

All 50 states and the District of Columbia currently participate in the WRIS. Federal employee wage data is not included. Each quarter, the states submit the SSNs for each worker for whom quarterly wages have been reported to the WRIS Clearinghouse. The WRIS Clearinghouse enters this information into a Distributed Database Index (DDI) containing the SSNs, the quarter for which wages have been reported, and the state reporting the wages. This information is maintained in the DDI for up to eight quarters. The WRIS Clearinghouse is currently operated by the ETA through a cooperative agreement with the State of Maryland (ETA 2010).

To determine if workers have been employed, state workforce agencies obtain wage data for workers who may be working in another state by submitting the SSNs of the workers

[9] Much of the information in this section was obtained through correspondence with former DOL Senior Economist Stephen Wandner.

of interest to the WRIS Clearinghouse. The WRIS Clearinghouse searches the DDI for information on the workers. If a match is found, then the WRIS Clearinghouse requests the relevant wage data from the matching state(s), making this information available for download from the requesting state. All requests for WRIS data must come from a state PACIA—the Performance Accountability and Customer Information Agency responsible for coordinating the state's program for assessing state and local program performance as required by the WIA. The PACIA may use the data to evaluate the success of state employment and training programs and providers, and to provide information necessary for reporting to the DOL on the success of WIA related programs.

WRIS originally had no access to data on the wages of federal employees since the federal government does not submit quarterly wage records to the state workforce agencies. WRIS has been enhanced by adding wage data on federal civilian employees, ex-service members and employees of the U.S. Postal Service through the Federal Employment Data Exchange System (FEDES). The FEDES project is managed by the Jacob France Institute at the University of Baltimore.

Accessing the WRIS for Research

The WRIS may be used to obtain wage data required for research, subject to certain constraints set forth in the WRIS Data Sharing Agreement:

- The research must relate to one or more of a specified set of employment related programs or activities (see below).
- The project must obtain the voluntary consent of each state whose data is used.
- A state that has agreed to participate in the research can share only its own data, not data obtained from other states through WRIS.
- All data for the project must be transmitted between the participating PACIAs—no other party may have access to the WRIS.

Research using WRIS data requires that all or almost all states are willing to make their wage record data available for each research project. Many states, however, are reluctant to share data other than for UI benefit payment and workforce performance measurement purposes, so the research option has been largely unused outside of the approved state agencies and programs.

The list of employment-related programs and activities approved for WRIS use includes: "state and local programs within the jurisdiction of the Department of Labor authorized under: (i) Title I of the Workforce Investment Act; (ii) Section 403(a)(5) of the Social Security Act (42 USC 603(a)(5)); (iii) Chapter 2 of Title II of the Trade Act of 1974 (19 USC 2271 et seq.); (iv) Wagner-Peyser Act programs, and (v) Chapter 41 of Title 38 of the United States Code." Additional approved programs include: "the Job Corps Program, Senior Community Service Employment Program, Migrant and Seasonal Farm Worker Program, Native American Program, Veterans Workforce Investment Program, Youth Build Program, Registered Apprenticeship Program, Prisoner Reentry Initiative Grant Program, H-1B Technical Skills Training Grant Program, and the Community-

Based and High-Growth Job Training Initiative Grant Program; and ETA programs and ETA grants funded under the American Recovery and Reinvestment Act of 2009 (ETA 2011a)."

The WRIS does not allow for the sharing of aggregate wage record results with third party entities for research. However, a new voluntary option, referred to as WRIS2, was approved for use by DOL in 2011. The WRIS2 agreement allows interested states to share aggregate wage data with certain programs not covered under the original WRIS data sharing agreement, such as One-Stop Career Center educational partner programs (ETA 2011b). This follows a proposal that was made to the WRIS Advisory Group in 2010 to allow states to share wage information with educational institutions in order to obtain additional outcomes information on behalf of workforce and economic development partner public agencies (GAO 2010). Twenty-three states are currently participating in the WRIS2 data sharing initiative (ETA 2012).

Administrative Data Research and Evaluation[10]

The Administrative Data Research and Evaluation (ADARE) project, managed by the Jacob France Institute at the University of Baltimore, facilitates interstate partnerships that use longitudinal administrative data for policy research and evaluation, with rapid response capabilities. ADARE began in 1998 as a DOL project based on longitudinal administrative databases created by individual states. It began with five states that already had this type of data system in place, and grew to include nine state partners covering 43 percent of the U.S. civilian labor force.[11] Each state created data sharing agreements with the key agencies maintaining their pertinent program administrative information. ADARE agreements allow controlled access to the data sources for authorized research and evaluation purposes without disclosing the identity of individuals or employers. The combined data systems are routinely updated according to pre-established schedules.

Six of the nine original state partners—Florida, Georgia, Maryland, Missouri, Ohio, and Texas—are currently fully involved with the ADARE initiative. Kentucky and New Jersey also participate to a lesser degree. Missouri has also had data exchanges with Illinois and Kansas on a number of ADARE-facilitated projects. Additionally, The Regional Area Data Exchange ADARE initiative results in quarterly exchanges of employment and earnings information among the District of Columbia, Maryland, New Jersey, Ohio, Pennsylvania, Virginia, and West Virginia for authorized research and evaluation purposes. The ADARE project follows a fluid model with states moving in and out of project participation depending on their resources and needs; for example, Washington and Michigan have both recently participated in ADARE-facilitated research.

[10] Much of the information in this section was obtained through interviews and correspondence with ADARE's executive director David Stevens in October 2010 and January 2012.
[11] The original partners were California, Florida, Georgia, Illinois, Maryland, Missouri, Ohio, Texas and Washington.

Using ADARE for Research

The ADARE project began with an investigation of welfare to work transition flows before, during and immediately following the switch from AFDC to TANF. Subsequent policy studies using ADARE that link workforce and education administrative data sources included multiple annual investigations of occupational trainee outcomes in Maryland (Stevens 2003) and a study of new teacher retention in Maryland public schools (Passmore et al. 2008). Current ADARE partner studies include non-experimental evaluation of WIA programs using data from multiple states (Heinrich et al. 2011), examining outcomes for adult students in various Ohio community college programs (Hawley 2010a, 2010b), and evaluating labor-market returns to GED certification in Missouri (Jepsen et al. 2010). Additional examples of partner publications illustrating collaborative efforts among states participating in ADARE are found on the Jacob France Institute (JFI) ADARE website.[12]

The project also acts as a broker for research initiatives seeking access to state administrative data. For example, JFI recently worked with Mathematica for a DOL-funded multi-state apprenticeship assessment, acting as a negotiator between Mathematica and the ADARE state partners. For an ASPE-funded study examining the role of UI benefits in maintaining self-sufficiency for TANF leavers (O'Leary and Kline 2008), JFI facilitated Upjohn's acquisition of the necessary administrative data through ADARE. For the USDA Economic Research Service's SNAP-UI Data Linkage Project, JFI coordinated a consortium of five states through ADARE, allowing the project to easily collect data from more states than they might have otherwise and requiring only one contract agreement for the five-state data (Anderson et al. 2012).

ADARE has published a document advising interested parties on how to negotiate similar partnerships in order to access state administrative data for research and evaluation purposes (Stevens 2004). ADARE only participates in projects that will produce data that ADARE states are interested in using for their own research and policy purposes, and the individual states or DOL have created their own publications from each project. ADARE's key concern is maintaining the integrity and security of is voluntary state partners, and they do not market the availability of their data. ADARE funding is project-specific; there is no foundation of operational capacity maintenance funding.

Conclusion

The NDNH, LEHD, WRIS, and ADARE were formed for different purposes and have different restrictions associated with their use. The NDNH was created for child support enforcement purposes but allows researchers to investigate relevant topics related to child support and TANF. However, data can only be obtained in de-identified form, complicating some analyses, and are deleted after one or two years. The LEHD was created for census programs such as the LED but can be accessed for approved research projects. However, research must be performed on-site at Census Bureau RDCs, the

[12] http://www.ubalt.edu/jfi/adare/publications.cfm

research must be shown to benefit Census Bureau programs, not all states permit use of their data in RDCs, and additional state approval must be sought if state-level results are presented. WRIS was established by DOL to facilitate data exchanges between states to improve UI program integrity and efficiency, and it can also be accessed for research pertaining to certain WIA-related employment and education programs. However, no research using the WRIS has been approved outside of this subject matter. The ADARE project was created to facilitate interstate partnerships for using longitudinal administrative data for policy research and evaluation. Although ADARE does assist individual research projects in obtaining agreements from states to access relevant administrative data, it only consistently covers a handful of states, and the projects are usually headed by or are a cooperative effort with one of the participating states themselves.

By providing or facilitating access to other states' UI wage data, the data sources described here make possible research and analyses that might otherwise never have been performed. However, the strict rules regarding access to and use of the data have likely prevented many other potentially useful analyses. The first priorities of policymakers and those responsible for the collection and maintenance of data on individuals should be to ensure that individual privacy is protected and that the data are used for appropriate purposes. The challenge is to ensure privacy and appropriate use of the data, while at the same time establishing rules and procedures that enable beneficial analyses to take place. Such issues continue to gain recognition. Notably, a memorandum from the Office of Management and Budget on November 3, 2010 focused on "Sharing Data While Protecting Privacy" (OMB 2010). The memo called on federal agencies to seek new avenues for sharing high-value data in order to facilitate increased program and policy analysis and evaluation. Acknowledgement of the vital nature of individually identifiable data is further evidenced through collaborative efforts, such as the Annual Conference on Microdata Access.[13]

[13] The second Annual Conference on Microdata Access was held on February 10, 2011, at the National Press Club Ballroom in D.C.

References

Abowd, John M., John Haltiwanger, Julia Lane, and Kristin Sandusky. 2001. "Within and Between Firm Changes in Human Capital, Technology, and Productivity." Working Paper. http://lehd.did.census.gov/led/library/misc/hcpaper.pdf.

Abowd, John M., Paul A. Lengermann, and Kevin L. McKinney. 2003. "The Measurement of Human Capital in the U.S. Economy." LEHD Technical Paper 2002-09. http://lehd.did.census.gov/led/library/techpapers/tp-2002-09.pdf.

Abowd, John M., Bryce E. Stephens, Lars Vilhuber, Fredrik Andersson, Kevin L. McKinney, Marc Roemer, and Simon Woodcock. 2005 "The LEHD Infrastructure Files and the Creation of the Quarterly Workforce Indicators." LEHD Technical Paper 2006-01. http://lehd.did.census.gov/led/library/techpapers/tp-2006-01.pdf.

Abowd, John M. 2010. "OnTheMap: Block-level Job Estimates Based on Longitudinally Integrated Employer-Employee Micro-data." *Association of Public Data Users Newsletter* 33(2). http://0-lehd.did.census.gov.iii-server.ualr.edu/led/partnersonly/doc/Abowd_OnTheMap.pdf.

Abowd, John M., Kevin McKinney, and Ian Schmutte. 2010. "How Important is Endogenous Mobility for Measuring Employer and Employee Heterogeneity?" http://cep.lse.ac.uk/seminarpapers/09-05-11-ABO.pdf.

Acs, Gregory, and Pamela Loprest. 2001. "The Status of TANF Leavers in the District of Columbia: Final Report." The Urban Institute. http://www.urban.org/pdfs/dc_tanf_leavers.pdf.

Administration for Children and Families. 2009. "Temporary Assistance for Needy Families (TANF) Eight Annual Report to Congress." U. S. Department of Health and Human Services. http://www.acf.hhs.gov/programs/ofa/data-reports/annualreport8/chapter05/chap05.htm#fn2.

Anderson, Theresa, John A. Kirlin, and Michael Wiseman. 2012. "Pulling Togther: Linking Unemployment Insurance and Supplemental Nutrition Assistance Program Administrative Data to Study Effects of the Great Recession." U. S. Department of Agriculture. http://www.fcsm.gov/12papers/Anderson_2012FCSM_X-B.pdf.

Andersson, Fredrik, Harry J. Holzer, and Julia I. Lane. 2002. "The Interaction of Workers and Firms in the Low Wage Labor Market." LEHD Technical Paper 2002-12. http://www.urban.org/uploadedPDF/410608_lowwage.pdf.

Andersson, Fredrik, Harry J. Holzer, and Julia I. Lane. 2003. "Worker Advancement in the Low-Wage Labor Market: The Importance of Good Jobs." LEHD Technical Paper 2003-08. http://lehd.did.census.gov/led/library/techpapers/tp-2003-08.pdf.

Andersson, Fredrik. 2003. “Causes and Labor Market Consequences of Producer Heterogeneity.” Dissertation, Department of Economics, Uppsala University. http://www.ifau.se/upload/pdf/se/2003/dis03-01.pdf.

Andersson, Fredrik, Julia Lane, and Erika McEntarfer. 2004. “Successful Transitions out of Low-Wage Work for Temporary Assistance for Needy Families (TANF) Recipients: The Role of Employers, Coworkers, and Location.” Final Report. http://www.urban.org/UploadedPDF/410997_FinalReport_HHS.pdf.

Andersson, Fredrik, Harry Holzer, and Julia Lane. 2005. *Moving Up or Moving On: Who Advances in the Low-Wage Labor Market?* New York: Russell Sage Foundation.

Andersson, Fredrik, Simon Burgess, and Julia Lane. 2009. “Do as the Neighbors Do: The Impact of Social Networks on Immigrant Employment.” The Institute for the Study of Labor (IZA) DP No. 4423. http://doku.iab.de/externe/2009/k091012p05.pdf.

Andersson, Fredrik, Iben Bolvig, Matthew Freedman, and Julia Lane. 2010. “Lost Jobs and Health Insurance: An Analysis of the Impact of Employment Volatility on Firm-Provided Health Insurance.” http://works.bepress.com/cgi/viewcontent.cgi?article=1007&context=matthew_freedman.

Andersson, Fredrick, John Haltiwanger, Mark Kutzbach, Henry Pollakowski, and Daniel H. Weinberg. 2011. “Job Displacement and the Duration of Joblessness: The Role of Spatial Mismatch.” U. S. Census Bureau for Economic Studies Paper No. CES-WP-11-30. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1939000.

Barth, Erling, Alex Bryson, James C. Davis, and Richard Freeman. 2011. “The Contribution of Dispersion across Plants to the Increase in U.S. Earnings Dispersion.” http://www.nber.org/public_html/confer/2010/LSf10/Freeman.pdf.

Bjelland, Melissa, Bruce Fallick, John Haltiwanger, and Erika McEntarfer. 2007. “Employer-to-Employer Flows in the United States: Estimates Using Linked Employer-Employee Data.” Finance and Economics Discussion Series Working Paper. http://www.federalreserve.gov/pubs/FEDS/2007/200730/200730pap.pdf.

Blau, David and Tetyana Shvydklo. 2011. “Labor Market Rigidities and the Employment Behavior of Older Workers.” *Industrial and Labor Relations Review* 64(3). http://digitalcommons.ilr.cornell.edu/ilrreview/vol64/iss3/3/.

Bloom, Dan, Sarah Rich, Cindy Redcross, Erin Jacobs, Jennifer Yahner, and Nancy Pindus. 2009. “Alternative Welfare-To-Work Strategies for the Hard to Employ, Testing Transitional Jobs and Pre-Employment Services in Philadelphia.” MDRC. http://www.urban.org/UploadedPDF/1001363_welfare-to-work_strategies.pdf.

Bureau of Labor Statistics (BLS). 2011. “BLS Handbook of Methods.” U. S. Department of Labor. http://www.bls.gov/opub/hom/.

Carnahan, Seth, Rajshree Agarwal, and Benjamin Campbell. 2010. "The Effect of Firm Compensation Structures on the Mobility and Entrepreneurship of Extreme Performers." http://www.frbatlanta.org/documents/news/conferences/10smallbusiness_agarwal.pdf.

Celik, Sule, Chinhui Juhn, and Kristin McCue. 2009. "Understanding Earnings Instability: How Important Are Employment Fluctuations and Job Changes?" U. S. Census Bureau Center for Economic Studies Paper No. CES-WP 09-20. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1471424.

Employment and Training Administration (ETA). 2010. "Wage Record Interchange System." U. S. Department of Labor. http://www.doleta.gov/performance/WRIS.cfm.

Employment and Training Administration (ETA). 2011a. "WRIS Data Sharing Agreement (as amended, February 17, 2011)." U. S. Department of Labor. http://www.doleta.gov/performance/pfdocs/WRIS_Data_Share_Agree_Amended_Febr_17_2011.pdf.

Employment and Training Administration (ETA). 2011b. "Voluntary, Opt-In Wage Record Interchange System Data Sharing Agreement." Email transmittal. U. S. Department of Labor. http://www.doleta.gov/performance/pfdocs/WRIS2_TransmittalEmail_Voluntary_Opt-in_10132011.pdf.

Employment and Training Administration (ETA). 2012. "The Wage Record Interchange System 2." U. S. Department of Labor. http://www.doleta.gov/performance/wris_2.cfm.

Fallick, Bruce, John Haltiwanger, and Erika McEntarfer. 2008. "U.S. Census Bureau Employment and Wage Consequences of Job Separation in the United States." Working Paper. http://www.parisschoolofeconomics.eu/IMG/pdf/Fallick.pdf.

Fallick, Bruce, John Haltiwanger, and Erika McEntarfer. 2011. "Nonemployment Duration and the Consequences of Job Separations." Working Paper. http://client.norc.org/jole/soleweb/11156.pdf.

Freedman, Matthew, Fredrik Andersson, Elizabeth Davis, Julia Lane, Brian McCall, and L. Kristin Sandusky. 2012. "Decomposing the Sources of Earnings Inequality: Assessing the Role of Reallocation." *Industrial Relations*. http://works.bepress.com/matthew_freedman/11/.

Goerge, Robert M. 2009. "Employment Outcomes for Low-Income Families Receiving Child Care Subsidies in Illinois, Maryland, and Texas." Final Report to U.S. Department of Health and Human Services Administration for Children and Families Office of Planning, Research, and Evaluation. Chapin Hall at the University of Chicago. http://www.jacob-france-institute.org/documents/90YE0070_Final.pdf.

Government Accountability Office (GAO). 2010. “Postsecondary Education: Many States Collect Graduates’ Employment information, but Clearer Guidance on Student Privacy Requirements is Needed.” U. S. Government Accountability Office. http://www.gao.gov/new.items/d10927.pdf.

Golan, Amos, Julia Lane, and Erika McEntarfer. 2007. “The Dynamics of Worker Reallocation Within and Across Industries.” *Economica* 74(1): 1-20. http://lehd-test.did.census.gov/led/library/techpapers/tp-2005-02.pdf.

Gottschalk, Peter, Erika McEntarfer, and Robert Moffitt. 2008. “Trends in the Transitory Variance of Male Earnings in the U.S., 1991-2003: Preliminary Evidence from LEHD data.” Prepared for presentation at the meetings of the American Economic Association, January 2009. http://fmwww.bc.edu/ec-p/wp696.pdf.

Hampshire, Robert C. and Craig Gaites. 2011. “Peer-to-Peer Carsharing: Market Analysis and Potential Growth.” *Transportation Research Record: Journal of the Transportation Research Board* 2217: 119-126. http://trb.metapress.com/content/g64464181h186002/.

Hawley, J. D. 2010a. “Status of Adults in Community and Technical Colleges: Intermediate and Long-term Outcomes Based on the Achieving the Dream Measures.” Draft report for the Ohio Board of Regents.

Hawley, J. D. 2010b. “Educational Outcomes for Adults in Developmental Education in Ohio Community Colleges: Findings from a 2002 Cohort Analysis.” Draft report for the Ohio Board of Regents.

Heinrich, Carolyn J., Peter R. Mueser, Kenneth R. Troske, Kyung-Seong Jeon, and Daver C. Kahvecioglu. 2011. "A Nonexperimental Evaluation of WIA Programs." In *The Workforce Investment Act: Implementation Experiences and Evaluation Findings*, Douglas J. Besharov and Phoebe H. Cottingham, eds. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, pp. 371-404.

Higgins, Holly and Ryan Martin. 2009. “The National Directory of New Hires: Understand Employment Patterns of TANF Recipients and Improving Program Integrity.” Presentation, U.S. Department of Health and Human Services, Administration for Children and Families. http://nawrs.org/Albany/Papers/NDNH%20Presentation%20.pdf.

Holzer, Harry, Julia Lane, and Lars Vilhuber. 2002. “Escaping Poverty for Low-Wage Workers: The Role of Employer Characteristics and Changes.” Unpublished manuscript. http://lehd.did.census.gov/led/library/techpapers/tp-2001-02.pdf.

Holzer, Harry J., Julia I. Lane, David B. Rosenblum, and Fredrik Andersson. 2011. *Where are All the Good Jobs Going?* Russell Sage Foundation.

Houston, Douglas and Paul M. Ong. 2011. “Determinants of Voter Participation in Neighborhood Council Elections.” *Nonprofit and Volunteer Sector Quarterly* (20)10: 1-18. http://nvs.sagepub.com/content/early/2011/11/01/0899764011425705.full.pdf+html.

Hsueh, JoAnn, Erin Jacobs, and Mary Farrell. 2011. “A Two-Generational Child-Focused Program Enhanced with Employment Services: Eighteen Month Impacts from the Kansas and Missouri Sites of the Enhanced Services for the Hard-to-Employ Demonstration and Evaluation Project.” MDRC. http://www.afterschool.ed.gov/programs/opre/welfare_employ/enhanced_hardto/reports/two_generational.pdf.

Jepsen, Christopher, Peter Mueser, and Kenneth Troske. 2010. “Labor-Market Returns to the GED Using Regression Discontinuity Analysis.” Under review, *American Economic Journal—Applied Economics*. http://economics.missouri.edu/working-papers/2010/WP1014_Mueser.pdf.

Juhn, Chinhui and Kristin McCue. 2010. “Comparing Measures of Earnings Instability Based on Survey and Administrative Reports.” U.S. Census Bureau Center for Economic Studies, Paper No. CES-WP-10-15. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1658489.

Kim, Jeongsoo. 2007. “The Impact of E-Government on Child Support Enforcement Policy Outcomes.” Proceedings of the 8th Annual International Digital Government Research Conference, University of California, Berkeley. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.96.342&rep=rep1&type=pdf.

King, Christopher T. 2003. “The Role of Child Support and Earnings in Texas Welfare and Poverty Dynamics.” Lyndon B. Johnson School of Public Affairs, University of Texas, Austin. http://www.utexas.edu/research/cshr/pubs/pdf/role_child_support.pdf.

Lengermann, Paul A. 2002. “Is it Who You Are, Where You Work, or With Whom You Work? Reassessing the Relationship Between Skill Segregation and Wage Inequality.” LEHD Technical Paper 2002-10. http://lehd.did.census.gov/led/library/techpapers/tp-2002-10.pdf.

McKenney, Kevin and Lars Vilhuber. 2008. “LEHD Infrastructure files in the Census RDC—Overview Revision: 219.” U.S. Census Bureau, LEHD Program. Suitland, Maryland. http://lehd.did.census.gov/led/library/tech_user_guides/overview_master_zero_obs_103008.pdf.

Mouw, Ted, and Arne L. Kalleburg. 2010. “Occupations and the Structure of Wage Inequality in the United States, 1980s to 2000s.” *American Sociological Review* 75: 402. http://asr.sagepub.com/content/75/3/402.full.pdf.

Office of Child Support Enforcement (OCSE). 2009. "A Guide to the National Directory of New Hires." U.S. Department of Health and Human Services, Administration for Children and Families. http://www.acf.hhs.gov/programs/cse/newhire/library/ndnh/background_guide.pdf.

Office of Management and Budget (OMB). 2010. "Sharing Data While Protecting Privacy." Memorandum for the Heads of Executive Departments and Agencies. http://www.whitehouse.gov/sites/default/files/omb/memoranda/2011/m11-02.pdf.

O'Leary, Christopher J., and Kenneth J. Kline. 2008. "UI as a Safety Net for Former TANF Recipients: Final Report." W. E. Upjohn Institute for Employment Research. http://aspe.hhs.gov/hsp/08/UI-TANF/report.pdf.

Pancook, Michael. 2006. "Tracking What Matters: Using Improved Performance Measures to Gauge Success of W-2." Wisconsin Council on Children and Families. http://www.wccf.org/pdf/W2%20Performance%20Measures%20Report%20Final.pdf.

Passmore, Ben, Nancy S. Shapiro, Treva Stack, David W. Stevens. 2008. Presentation, 2008 Association for Institutional Research Annual Forum, Seattle, WA. http://www.ubalt.edu/jfi/adare/documents/example-study-1.pdf.

Pitts, Robert K. 2010. "Spatio-Temporal Labor Market Analytics: Building a National Web-Based System." Proceedings of the 1st International Conference and Exhibition on Computing for Geospatial Research and Application (COM.Geo '10). http://portal.acm.org/citation.cfm?id=1823854.1823903.

Redcross, Cindy, Dan Bloom, Gilda Azurdia, Janine Zweig, and Nancy Pindus. 2009. "Transitional Jobs for Ex-Prisoners: Implementation, Two-Year Impacts, and Costs of the Center for Employment Opportunities (CEO) Prisoner Reentry Program." MDRC and the Urban Institute. http://www.urban.org/UploadedPDF/1001362_transitional_jobs.pdf.

Redcross, Cindy. 2009. "Using NDNH Data to Evaluate Transitional Jobs." Presentation, National Association for Welfare Research and Statistics. MDRC. http://nawrs.org/Albany/Papers/NDNHdata.pdf.

Schexnayder, Deanna T., Jerome Olson, Jennifer Beck, Ying Tang, Hyunsub Kum, Daniel Schroeder, Patricia Norman, and Daniel P. O'Shea. 2001. "The Effectiveness of Various Texas Child Support Collection Strategies." Lyndon B. Johnson School of Public Affairs, University of Texas, Austin. http://www.utexas.edu/research/cshr/pubs/pdf/OAGColl.pdf.

Stevens, David W. 2002 "Employment that is not covered by state unemployment insurance laws." LEHD Technical Paper 2002-16. http://lehd.did.census.gov/led/library/techpapers/tp-2002-16.pdf.

Stevens, David W. 2003. “Occupational Skills Training in Maryland: A Study of Earnings Trends.” Prepared for Governor’s Workforce Investment Board. http://www.ubalt.edu/jfi/jfi/reports/earnings_study.pdf.

Stevens, David W. 2004. “Responsible Use of Administrative Records For Performance Accountability: Features of Successful Partnerships.” Administrative Data Research and Evaluation Project (ADARE), Jacob France Institute, University of Baltimore. http://www.jacob-france-institute.org/documents/dol_guide_rev_draft_1-5-03.pdf.

Solomon-Fears, Carmen. 2011. “The National Directory of New Hires.” Congressional Research Service, Washington, DC. http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1828&context=key_workplace.

Tate, Geoffrey and Liu Yang. 2011. “The Bright Side of Corporate Diversification: Evidence from Internal Labor Markets.” Working Paper, Anderson School of Management, UCLA. http://www.rhsmith.umd.edu/finance/pdfs_docs/SeminarFall2011/YangLiu.pdf.

Tilahun, Nebiyou Yonas. February 2010. “Matching Home and Work: Job Search, Contacts, and Travel.” Dissertation, Center for Transportation Studies, University of Minnesota. http://conservancy.umn.edu/bitstream/59621/1/Tilahun_umn_0130E_10961.pdf.

Tilahun, Nebiyou and David Levinson. 2011. “Work and Home Location: Possible Role of Social Networks.” *Transportation Research Part A: Policy and Practice* 45(4): 323-331. http://www.sciencedirect.com/science/article/pii/S0965856411000127.

Tolbert, Charles M., and Troy C. Blanchard. 2011. “Local Manufacturing Establishments and the Earnings of Manufacturing Workers: Insights from Matched Employer-Employee Data.” U.S. Census Bureau Center for Economic Studies Paper No. CES-11-01. http://www.ces.census.gov/index.php/ces/cespapers?down_key=101938.

Turetskey, Vicki. 2008. “Preserve the Child Support System: Don’t Let the New Hire Database be Hijacked for Immigrant Employment Verification.” Center for Law and Social Policy. http://www.clasp.org/admin/site/publications/files/0411.pdf.

U. S. Census Bureau. 2002. “Filling Data Gaps: The LEHD Partnership.” http://lehd.did.census.gov/led/about-us/brochure.pdf.

U. S. Census Bureau. 2011a. “Longitudinal Employer-Household Dynamics: Frequently Asked Questions.” http://lehd.did.census.gov/led/about-us/FAQ.html#lehd.

U. S. Census Bureau. 2011b. “Local Employment Dynamics: State Partners.” http://lehd.did.census.gov/led/led/statepartners.html.

Wandner, Stephen A., and Michael Wiseman. 2011. "Financial Performance Incentives." In *The Workforce Investment Act: Implementation Experiences and Evaluation Findings*, Douglas J. Besharov and Phoebe H. Cottingham, eds. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, pp. 277-312.

Webber, Douglas A. 2011. "The Impact of Firm Market Power on the Earnings Distribution." Working Paper. Cornell University. Ithaca, NY. http://economics.cornell.edu/uploads/Webber_Firm_Monopsony_Inequality.pdf.

Wiseman, Michael. 2007. "Performing for Prizes: The High Performance Bonus as an Instrument for Improving Management of American Social Assistance." School of Public Policy and Public Administration and Department of Economics, George Washington University. Washington, DC. http://www.pmranet.org/~pmranet/conferences/AZU2007/ArizonaPapers/WisemanPMRA.pdf.

Woodcock, S. D. 2002. "Agent Heterogeneity and Learning: An Application to Labor Markets." LEHD Technical Paper 2002-20. http://lehd.did.census.gov/led/library/techpapers/tp-2002-20.pdf.

Zweig, Janine, Jennifer Yahner, and Cindy Redcross. 2011. "For whom does a transitional jobs program work? Examining the recidivism effects of the Center for Employment Opportunities program on former prisoners at high, medium, and low risk of reoffending." *Criminology & Public Policy* 10: 4. http://onlinelibrary.wiley.com/doi/10.1111/j.1745-9133.2011.00767.x/pdf.