

**The Dynamics of Work, Poverty, and Business Cycles:
An Analysis of Oregon Households Receiving Food Assistance**

by

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Abstract

Oregon's Supplemental Nutrition Assistance (SNAP) (formerly called *Food Stamps*) rose by 33% between October 2008 and October 2009 as the economy went into recession and the unemployment rate increased. The percentage of Oregon's overall population receiving SNAP benefits increased from 11.8% in July 2005 to 16.3% in July 2009. With an estimated 87% of Oregon's eligible population participating in SNAP, the caseload provides a reasonable representation of the state's poor households in general. This paper analyzes the characteristics of SNAP households using three intake cohorts: calendar years 2003 and 2005, and fiscal year 2009. These years represent two recessions and a period of economic expansion. These cohorts are analyzed in terms of family structure, employment and earnings, and other measures. The cohorts are compared to poverty statistics and to Oregon households in general. The cohorts are analyzed to gain insight into how the business cycle affects household poverty. The earlier cohorts are analyzed with respect to SNAP receipt spell length and recidivism. Determinants of spell length and recidivism are then examined within the 2009 cohort to determine how quickly and to what extent that cohort, and the poor households it represents, might respond to an economic recovery. Suggestions are made as to the further use of these data for policy and program planning.

Introduction

The Supplemental Nutrition Assistance Program (SNAP), formerly known as *Food Stamps*, is one of the country's largest public assistance programs. Nationwide, 15.2 million households were enrolled in the program during federal fiscal year 2009. As of October 2009, 343,000 Oregon households and 654,000 people were enrolled in the program (Oregon Department of Human Services [DHS], 2010). SNAP benefits are available to households with incomes of up to 135% of federal poverty level (U.S. Department of Agriculture, Food and Nutrition Service [USDA FNS] 2009).

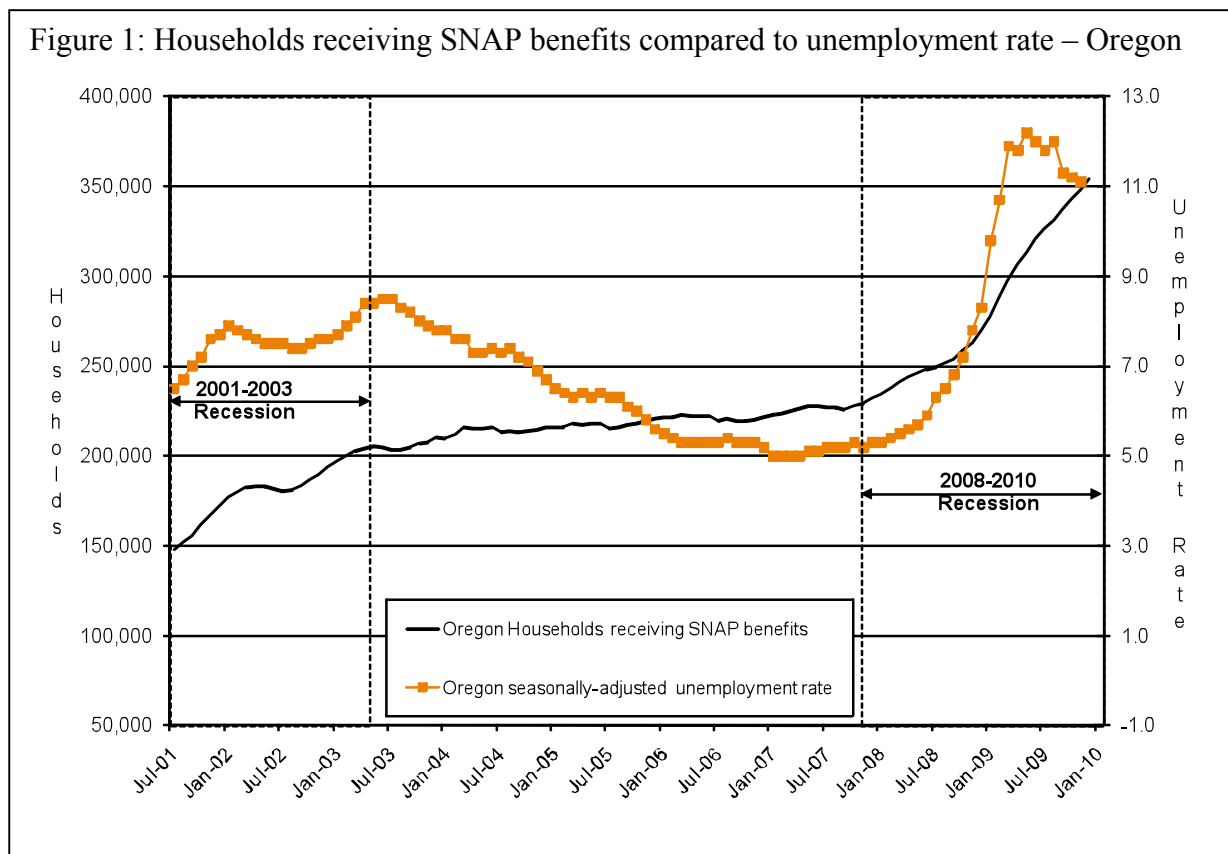
The USDA FNS ranks states' SNAP participation rates by comparing a state's SNAP caseload to the size of its eligible population. Oregon has consistently ranked among the top-ten states during the last decade. Oregon ranked fifth among the states in 2007 with an estimated 87% of its eligible population participating in the program (USDA FNS, 2010). This relatively high participation rate suggests that Oregon's SNAP caseload provides a reasonable representation of the characteristics of Oregon's poor and low income families in general. The demographic, household structure, and employment characteristics of SNAP households can be compared to poverty statistics and contrasted with Oregon households in general. SNAP households can be compared during periods of economic recession and expansion to see how changes in the economy affect the number and composition of Oregon's poor and low-income households.

SNAP caseloads have undergone unprecedented growth in the past year in Oregon and the nation. Oregon's caseload increased by 33% between October 2008 and 2009 (Oregon DHS, 2010). This was the largest increase in a state's SNAP caseload as a percentage of its population in the nation (Isaacs, 2009). The U.S. and most of the world faced economic recession during

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that period, and the national unemployment rate increased from 6.6% to 10.1%. Oregon's unemployment rate increased from 7.2% to 11.2% (Oregon Employment Department, 2010).

Simultaneous growth in the unemployment rate and SNAP caseload also occurred during the last recession of 2001-2003, although to a lesser degree than during the 2008-2009 recession (Figure 1).



Numerous studies have associated increases in unemployment with SNAP caseload increases (USDA Economic Research Service [ERS], 2008). While the effect of rising unemployment on Oregon's SNAP caseload is apparent, the effect of decreasing unemployment is not. As Oregon's economy recovered from the 2001-03 recession the unemployment rate declined and total employment increased, but the SNAP caseload remained relatively constant.

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Oregon's SNAP participation rate averaged 82.5% between 2001 and 2004, and then increased to 86% for 2005 through 2007 (USDA FNS, 2010). Oregon's poverty rate increased from 10.9% in 2002 to 12.5% in 2003, and then declined to 11.8% in 2004 (U.S. Census Bureau, 2010a).

These trends support the possibility that Oregon's efforts to increase its SNAP participation rate brought additional households into the caseload just as households displaced during the 2001-03 recession were gaining employment and leaving the caseload. Thus the caseload did not appear to 'recover' from the 2001-03 recession.

Still, the fact that the SNAP caseload did not decrease during the 2004-2006 economic expansion is worrisome in view of the caseload size as of 2009. A large residual effect from the current recession on the SNAP caseload has implications beyond the caseload itself. A comparison of Oregon's SNAP caseload to its official population estimates for July 2005 and July 2009 shows that the percentage of Oregonians receiving SNAP benefits has increased from 11.8% to 16.3% (Oregon DHS, 2010; Portland State University, 2010a). If the post-recession pattern of 2004 and 2005 repeats itself given the current high level of SNAP use, it would signal a fundamental change in Oregon's income distribution.

Objectives

This paper has several objectives:

- Describe the characteristics of Oregon SNAP households in terms of family structure, other public assistance program participation, the degree to which household members work, how much they earn, and the sectors in which they are most likely to be employed. Compare SNAP households to characteristics of all Oregon households and poor households in general.
- Compare and analyze SNAP cohorts from periods of economic expansion and

recession to determine whether differences exist between households that begin a SNAP receipt spell during a recession versus those that begin a spell during an expansion. Identify and analyze any distinctions of the households that contributed to the recent unprecedented increase the SNAP caseload.

- Identify the determinants of SNAP receipt spell length and recidivism and use those determinants to classify the households that contributed to the recent increase the SNAP caseload. Determine how quickly and to what extent those households, as an indicator of poor households in general, might respond to an economic recovery.
- Suggest how the information from this analysis could be use for policy and program planning.

To accomplish these objectives, this paper analyzes the characteristics of SNAP households using random samples drawn from three intake cohorts: calendar years 2003 and 2005, and fiscal year (FY) 2009¹. These years represent two recessions and a period of economic expansion. The cohorts are analyzed in terms of family structure, employment and earnings, and other public assistance benefits that were received in conjunction with SNAP. The cohorts are also compared to poverty, employment, and household characteristics available from the U.S. Bureau of Census, U.S. Bureau of Labor Statistics, and the Oregon Employment Department. The 2003 and 2005 cohorts are then combined and earnings characteristics are tracked for the periods before, during and after SNAP receipt. The 2003 and 2005 cohorts are also analyzed with respect to SNAP receipt spell length and recidivism. Finally, the 2009 cohort is classified according

¹ Oregon's fiscal year runs from July 1 through June 30.

to expected spell length and recidivism based on the factors that were important determinants for the earlier cohorts.

Theory

Poverty Correlates

The correlates of poverty are well documented. The following statistics pertain to 2008, but the general pattern has persisted for years. The poverty rate among all Americans is 13.2%. Along racial or ethnic lines, African Americans have the highest poverty rate at 24.7%, followed by Hispanics at 23.2%. Non-Hispanic whites have the lowest rate at 8.6%. In terms of family structure, people in families headed by females with no husband present have the highest poverty rate at 31.3%, followed by those in families headed by single males at 14.2%. People in married couple families have the lowest rate at 6.7%. Children under five who reside in families headed by single females have a poverty rate of 55% compared to 11.2% for children in married-couple families (U.S. Census Bureau, 2010a). The poverty rate by age is approximately U-shaped, with higher rates among children, young adults, and older adults, and the lowest rates among those in their thirties and forties (Rank & Hirshl, 2002; U.S. Census Bureau, 2010a).

The poverty rate is higher among those living outside of a metropolitan statistical area (15.1%) than among those who reside within one (12.9%) (U.S. Census Bureau, 2010a). In 1999, 40.5% of female-headed households with children residing in non-metropolitan areas were poor. This compares to 40.8% of such households in central city metro areas and 27.9% in suburban metro areas (Snyder, McLoughlin, & Findeis, 2006). Those percentages have increased since then. In 2008, they were 47.4%, 44.0%, and 31.0%, respectively (U.S. Census Bureau, 2010a). Although the cost of housing may be lower in non-metropolitan areas, other costs such as food and transportation are higher and earnings tend to be lower. For example, small towns lack large

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grocery stores that could offer lower priced items due to economy of scale. Rural residents must either pay a premium for food in a small town store or incur transportation costs to obtain items in the nearest large market area. Jobs are typically low wage production or service-related and may be part-time or seasonal. Rural areas tend to lack public transportation and affordable child care. (Albrecht, Albrecht, & Albrecht, 2000; Beale, 2004; Foulkes & Newbold, 2008; Hirasuna & Stinson, 2005; Jensen, McLaughlin, & Slack, 2003; Summers, Harvey, & Mushinski, 2006; Zimmerman, Ham, & Frank, 2008).

Educational attainment is markedly different between the poor and non-poor. Among people that were over the age of 25 in 2008, 26% of those with less than a high school diploma were poor compared to 11% of high school graduates and 3.8% of those with at least a four-year college degree (U.S. Census Bureau, 2010a).

The program participation rate fluctuates with the business cycle. Several studies have documented a statistical association between the unemployment rate and welfare entry or the duration of welfare receipt (Blank, 1997a; Freeman, 2001; Grogger, 2004; Sandefur & Cook 1997; Scholz & Levine, 2001; Zimmerman et al., 2006). Other studies have associated change in the size of SNAP caseloads with business cycle fluctuations. SNAP caseloads decline during peaks in the business cycle, and they increase during recessions (USDA ERS, 2008).

The current recession is somewhat distinct in that men suffered sudden and severe job loss in Oregon and the nation. In non-recessionary periods, men and women tend to have equal unemployment rates. During recessions, it is not uncommon to see a higher unemployment rate among men than women. During the 2001-03 recession Oregon men had a higher unemployment rate than women, but their respective unemployment rates diverged at a gradual rate during that recession. In Oregon's current recession, the unemployment rate for men increased dramatically

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at the outset, while the rate for women increased slightly. The largest job losses occurred in construction and manufacturing, industries with some of the highest percentages of male employment. As of September 2009, three times as many men as women were collecting unemployment insurance in Oregon (Beleiciks, 2009).

Finally, the poverty rate among all people has declined since 1959, the beginning of consistent federal poverty measures. The rate of poverty among all Americans was 22.4% in 1959 and 13.2% in 2008 (Scholz & Levine, 2001; U.S. Census Bureau, 2009a).

Structural Theories of Poverty

Structural theories of poverty posit that poverty is unevenly distributed among demographic groups because some groups face institutional barriers to obtaining income and wealth. For example, the organization of the economy is such that people who are disadvantaged by institutionalized racism or sexism find themselves working in the secondary labor market. The secondary labor market is characterized by jobs with lower wages, few fringe benefits such as sick leave, vacations, or health insurance, and little job security (Piore, 1986). Poor and low-income households have limited residential choices and often live in neighborhoods with underperforming schools and high dropout rates, thereby contributing to inter-generational poverty. In American society divorced women are more likely to have custody of children, and it is not uncommon for mothers to raise their children without a partner. Women also tend to work in lower-paying service or administrative occupations. This combination of single parenthood and limited earning capacity contributes to the high poverty rate among households headed by single women (Poppo & Leighninger, 2001). Economic restructuring such as plant closures, industrial decline, and depletion of natural resource-based livelihoods can also leave large groups of people in a state of long-term unemployment (Albrecht, et al., 2000; Jensen, et al., 2004;

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Wilson, 1987). Other evidence supporting structural poverty theory is the fact that most high poverty rural counties in the U.S. are located in areas of historical racial segregation or class dominance: the southern lowlands (African Americans), the Southwest and Rio Grande Valley (Hispanics, Native Americans), the northern Great Plains (Native Americans), and southern highlands (non-Hispanic whites) (Beale, 2004; Mannion & Billings 2006; Snipp, 1996; Summers, et al., 2006).

Defining Poverty Spell Length Categories

Several longitudinal studies have documented that a large percentage of the U.S. population experiences poverty for short periods of time. As the length of the poverty spell increases, the percentage of the population that is affected decreases. Prior research has found that between one-quarter and one-third of the population experiences poverty for at least one year (Blank, 1997b; Duncan, Hill, Corcoran, Coe, & Hoffman, 1984). Another study found that two-thirds of adults aged 20 to 65 will at some point reside in a household that receives public assistance for at least one month (Rank & Hirschl, 2002). Households that undergo short term poverty spells are called *transitionally poor*. The temporary state of poverty results from an event such as a job loss, illness, death of a breadwinner, or return to school. At the other end of the poverty spell spectrum are *persistently poor* households that are in a state of poverty for long periods of time: many years or even generations. Between 2.6% and 4.9% of the population fit in this category (Blank, 1997b; Duncan et al., 1984). In between the extremes of poverty spell length are the *intermittently poor*, also called *marginally poor* or *working poor*. These are households that undergo repeated poverty spells. During periods of very low unemployment, intermittently poor households are able to lift themselves out of poverty. During recessions they are likely to return to poverty (Freeman, 2001).

Poverty Correlates, Theory and SNAP Households

If SNAP households do represent Oregon's poor and low-income families, they should bear many of the demographic and household characteristics associated with poverty as described by published statistics. There should be a disproportionate share of SNAP households that are headed by single-females and racial or ethnic minorities when compared to all Oregon households. Rural households should also be overrepresented among SNAP recipients. There should be some differences between SNAP cohorts from recessionary versus peak employment periods because recent job or earnings loss rather than structural barriers should precede more SNAP spells during a recession. A cohort from a recession year should be larger than a cohort from a non-recession year. Evidence that an employment disruption occurred just before the SNAP spell should be more common among recessionary cohorts. There should be some evidence of greater male job loss and poverty in 2009 compared to other cohorts. Consistent with structural theory, there should be evidence that households with characteristics that are associated with high rates of poverty have longer SNAP receipt spells than other types of households. For example, we would expect that households headed by single females in rural areas would remain on SNAP longer than households with more than one adult located in metropolitan areas. Consistent with Blank and Duncan's spell-length typology, we should expect to see relatively few households with long SNAP receipt spells, more households that fit the pattern of intermittently poor, and even more households with relative short receipt spells that could be classified as transitionally poor.

Data and Sampling

In Oregon, SNAP recipients access the program either through the Children, Adult, and Families (CAF) Division or the Seniors and People with Disabilities (SPD) Division. SNAP

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cases administered through the SPD cover eligible seniors or disabled persons, most of whom receive other services through SPD. This analysis focuses on employment history, family structure, and the effect of business cycle fluctuation on family income and poverty rates. It is reasonable to assume that these issues would not affect the SPD caseload to a great extent. For example, 12.7% of Oregonians over age 65 were in the labor force during 2008, compared to 78.5% of persons between 20 and 64 (U.S. Census Bureau, 2009b). Therefore, this analysis pertains only to the CAF portion of the SNAP caseload, which comprises 75% of the total.

This study is based on Oregon DHS administrative data on CAF SNAP client households. All data were obtained from DHS' Integrated Client Services (ICS) data warehouse. ICS assigns a unique identification number to each individual which allows the individual's participation to be tracked across all DHS programs. This *master id* allows detailed analysis of clients while protecting their identity.

SNAP data consist of individuals within households. Each household is assigned a unique case number, and each case contains one individual classified as the *head of household*. The head is either the only adult in the household or is designated by the other household members as the main point of contact between DHS and the household.

The data used in this study consist of information about individuals and households receiving SNAP benefits in Oregon. Previous and concurrent public assistance benefit and employment history were assembled for individuals. Concurrent benefit groups included Temporary Assistance for Needy Families (TANF) cash grants or medical assistance, employment related daycare subsidies, and various medical assistance programs. Recipients that participated in the Oregon Food Stamp Employment and Training (OFSET) program were flagged, as were persons with any prior history of TANF cash receipt. Employment records

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contained within the ICS originally came from the Oregon Employment Department, and they pertain to Oregon employment covered by unemployment insurance. Information on hours worked and wages paid by industry was collected for adults for the four quarters preceding the quarter in which SNAP benefits began (the *SNAP quarter*), during SNAP receipt, and the four quarters following the quarter in which SNAP benefits ended. Demographic information on individuals included age, sex, and race. Children were divided into two groups according to age: school-age (6 to 17), and those under age 6 at the time the SNAP receipt spell began. More than half of the records were missing the ethnicity variable, so it was omitted from the analysis.

Information on individuals was summed to the household level. Geographic information on the household at the time the case opened was collected including the census block and whether or not the household was homeless. Using the census block or county, households were classified according to various definitions of rurality: Office of Management and Budget (OMB) metropolitan, micropolitan, and non-core counties; Census Bureau urban or rural designation, and USDA ERS' rural/urban commute areas (RUCAs) (Crandall & Weber, 2005).

Each household was represented by one record based on its characteristics when the SNAP receipt spell started. In addition to geography, each record contained demographic information about the head of household, the total number of persons in the household, whether there were other adults, and whether there were children in either age group.

Employment data were summed to indicate whether any adults worked during any quarter in the year prior to the SNAP quarter, whether any adults worked during the SNAP quarter, and whether any adults worked full time during those two periods. A full-year full-time worker was defined as any adult who had completed four consecutive quarters of full-time work as of any quarter during the year prior to the SNAP quarter. Full-time work was defined as 35

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hours per week, consistent with the definition used by the U.S. Bureau of Labor Statistics. The sum of wages earned by all adults in the household during the year prior to the SNAP quarter was captured as well as the two-digit North American Industrial Classification System (NAICS) code pertaining to the industry in which the person worked the most hours in the prior year. Wages were deflated using the Portland Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W, 1982-84 = 100).

Worker participation in industries with a seasonal pattern was noted. Seasonal indices were calculated using a multiplicative method based on Census Method I. Indices were calculated based on total hours per quarter by two-digit NAICS code for SNAP participants in the study (employment data were available from January 2000 through June 2009). If there was a difference of at least five percentage points between the seasonal peak and trough for the SNAP participants in the industry, the industry was flagged as seasonal, and any worker with participation in one of these industries was flagged as seasonal. A list of industries flagged as seasonal appears in the Appendix.

The SNAP caseload for a given month is composed of all households receiving an allotment during that month. SNAP households must recertify their eligibility every six months. Late recertification can result in missed allotments for a household and the appearance that the case has closed, only to be reopened in the next month. In addition, temporary changes in household income can result in relatively short absences from the caseload. ICS data reflect only whether or not an allotment was disbursed. There is no code denoting whether or not a case has closed. Part of this analysis involved classifying households according to spell length and recidivism, so it was important to control for this administrative effect. A sensitivity analysis was performed to help define how many months need elapse between receipt spells for them to be

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considered separate episodes.

The sensitivity analysis involved drawing six random samples from the combined 2003 and 2005 SNAP intake cohorts. ICS data are left-censored, beginning in January 2000. In the raw SNAP data, 93% of cases that restart after a stop in benefits do so within 36 months. The years 2003 and 2005 were chosen because we could be reasonably confident of capturing a household's entire Oregon spell history. Using multiple years controlled for one-year anomalies, and these particular years represented a recession and a recovery. Each of the six samples was based on a distinct definition of recidivism ranging from a gap between receipt spells of two to seven months. If a household returned to the caseload after gap of fewer than the criterion number of months specified for a given sample, the receipt spells were combined and treated as one unbroken spell. Using the sample in which recidivism was defined as a gap between receipt spells of two months as an example, a household with multiple spells separated by gaps of one month would be considered as having one unbroken spell spanning the entire period between the start date of the first spell to the end date of the last spell.

After spells were combined in each sample, household types were classified as *repeat*, *long-term*, or *short-term*. These classifications are based on the *intermittent*, *persistent*, and *transitional* poverty framework developed by Blank (1997b) and Duncan et al. (1984). Repeat households were defined as those who recidivated. Long-term households had spell lengths at or above the 75th percentile and had either not left the caseload or not recidivated. Short-term households had spell lengths below the 75th percentile and had not recidivated. In an alternative specification, the short versus long-term criterion was set at the median. Spell length criteria higher than the 75th percentile were not analyzed because this specification would result in too few cases being classified as long-term. The information described above was assembled for

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each household.

Multinomial logistic regressions were performed on each of the six samples. Multinomial logistic regression is a general form of binary logistic regression designed for cases in which there are three or more possible outcomes. One of the outcomes is chosen as the *reference category* and the other outcomes are compared to the reference category through a combination of binary logistic regressions. Each case receives a score ranging from zero to one for each potential outcome. The case is assigned to the outcome with the highest score. In the sensitivity analysis, the household type (repeat, long-term, short-term) was the dependent variable (outcome), and short-term was the reference category. The independent variables consisted of the

Table 1. Sensitivity Analysis: Multinomial logistic regression and determinants of client household differences ¹

Minimum months absence (75 th percentile spell length) ²	Nagelkerke R ²	Long-term cases (Pct Correct)	Repeat (Pct Correct)	Short-term cases (Pct Correct)	Total (Pct Correct)	Proportional by chance criterion ³	False positive rate ⁴	False negative rate ⁵
2 (18 mos.)	0.145	407 (2.9)	1432 (85.8)	813 (28.5)	2652 (55.5)	51.2	28.2	29.0
3 (20 mos.)	0.139	438 (6.6)	1376 (84.4)	866 (29.6)	2680 (54.0)	49.3	29.4	30.4
4 (22 mos.)	0.120	471 (7.9)	1268 (76.3)	944 (42.2)	2683 (52.3)	47.3	33.6	28.9
5 (24 mos.)	0.135	512 (12.3)	1194 (67.7)	949 (46.0)	2655 (49.3)	45.9	37.2	30.4
6 (25 mos.)	0.138	540 (18.3)	1106 (58.6)	1043 (54.8)	2689 (49.1)	45.0	38.8	28.9
7 (27 mos.)	0.128	542 (16.6)	1023 (47.8)	1089 (69.5)	2654 (50.3)	44.7	41.0	22.6

1. Based on six random samples of 3,000 drawn from all households that received SNAP benefits in 2003 or 2005. Independent variables are listed in Tables 9 and 10, below.
2. Number of households in the total populations from which the samples were drawn varied based on the minimum gap in service required to separate receipt spells. The population based on a minimum gap of two months numbered 204,865; 3 months=196,266; 4 months=187,323; 5 months=180,669; 6 months=174,697; 7 months=169,217.
3. Calculated as $1.25 * (\text{percent long-term}^2 + \text{percent repeat}^2 + \text{percent short-term}^2)$.
4. Calculated as $(\text{number of cases incorrectly assigned to a higher category}) / (\text{number of cases correctly assigned} + \text{number of cases incorrectly assigned to a higher category})$.
5. Calculated as $(\text{number of cases incorrectly assigned to a lower category}) / (\text{number of cases correctly assigned} + \text{number of cases incorrectly assigned to a lower category})$.

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data elements described above pertaining to program participation, household structure, demographics, location, and employment characteristics. These variables are listed in detail in tables 9 and 10, below.

Table 1 shows the results of the analysis. All samples yielded a ‘hit rate’ higher than the proportional by chance criterion. Samples based on shorter gaps by definition had larger shares of cases classified as repeat. In these samples, models predicted repeat cases well but did poorly on other types. Three samples had Rs-squared near or above .14. Among those three, the sample based on a six month criterion yielded the most balanced accuracy among the three household types. The two larger groups, repeat and short-term, were each predicted with over 50% accuracy, and long-term cases were predicted with the most accuracy of any of the samples (18%). The 75th percentile of spell length under this definition was 25 months. The alternate analysis based on dividing long and short-term households at the median performed poorly for all gap lengths (not shown). Based on the sensitivity analysis, repeat intakes were defined as those having occurred after a caseload absence of six months or more. Multiple spells separated by fewer than six months were combined and treated as one unbroken spell. Unless otherwise noted, all analyses in this study use this definition.

Household receipt spell history was assembled for SNAP intake cohorts from calendar years 2003, 2005, and fiscal year 2009 (N=98,406, N=87,646, N=138,022 respectively). If a household had more than one receipt spell during the year, the first spell was selected so that each household in the cohort had an equal chance of selection. A random sample of 1,500 cases was drawn from each cohort. There were 8,593 individuals associated with the 4,500 households in the samples. Households that were headed by persons under age 18 or over age 64 were omitted in order to limit the analysis to households headed by working-age adults. Once these

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cases were omitted, 1,460 cases remained for 2003, 1,460 for 2005, and 1,470 for 2009. These sample sizes yield 95% confidence intervals of +/-2.5% and 99% confidence intervals of +/-3.3%. Samples rather than populations were used to avoid the time and space requirements of manipulating very large data files.

Results – Part 1- Comparison of Intake Cohorts

The samples were compared across the assembled variables. The 2003 cohort had a higher percentage of households on their first receipt spell, but this may have been partially affected by left-censoring of ICS data which “begin” in January 2000. The percentage of new client households increased to nearly 60% in 2009, four percentage points higher than in 2005. The 2009 cohort contained more households with multiple adults and fewer households headed by single females than the other cohorts. There was a lower percentage of households from OMB micro and non-core counties in the 2009 cohort when compared to 2005. Overall, participation in other assistance programs declined with each successive cohort. Most of the decline stems from the Oregon Health Plan (OHP) Standard program. This benefit initially was open to Oregonians at or below poverty level, but it was closed to new clients as of July 2004 and participants were required to re-qualify semi-annually. As a result, participation declined substantially after 2004, and this is reflected among SNAP households (Oregon DHS, 2005).

Participation in TANF-related medical was also lower in 2009 even though there was no difference in TANF-cash participation. TANF-eligible clients may decline the cash benefit but still receive the medical benefit. This arrangement was more common in 2003 and 2005 than in 2009, but no explicit policy explanation could be identified as the cause (Table 2).

About 60% of households in each cohort had an adult with some work history in the year prior to receiving SNAP, but the 2009 cohort had significantly higher full-time work

participation. Nearly one-third of 2009 households had a full-time worker during at least one quarter prior to starting SNAP compared to just over 25% of the earlier cohorts. Twenty percent of the 2009 cohort had a full-year, full-time worker during the prior year compared to 15% in 2003 and 17% in 2005. However, 36% of the households in the 2009 cohort had an adult working *during* the SNAP quarter, compared with more than 40% of each of the other two cohorts (Table 3).

Nearly 30% of workers in the 2009 cohort experienced a drop in wages in the quarter prior to the SNAP quarter. This compares to 24% in 2003 and 20% in 2005 (Table 3). The average drop in quarterly earnings was 34% for 2003 and 2009 and 38% for 2005 (not shown). Households and individuals in the 2009 cohort earned more money than their 2003 and 2005 counterparts. The average annual earnings in the year prior to SNAP receipt was \$8,038 for households and \$2,517 for individuals in the 2009 cohort. Households in the 2005 cohort averaged \$6,270 in annual earnings and individuals averaged \$1,872. Households in the 2003 cohort averaged \$6,476 in annual earnings and individuals averaged \$1,799 (all 1982-1984 constant dollars). Neither individual nor household earnings were significantly different in 2003 versus 2005, but 2009 was significantly different compared to each of those years. For 2003 and 2009, $t=5.72$, $p<.001$ for households, and $t=9.15$, $p<.001$ for individuals. For 2005 and 2009, $t=4.86$, $p<.001$ for households, and $t=7.06$, $p<.001$ for individuals (not shown).

Table 2. Comparison of client household characteristics¹

	Year SNAP Receipt Spell Began			χ^2	p-value	V
	2003 ²	2005 ³	2009 ⁴			
Number of households	1,460	1,460	1,470			
New client households	65.4 [†]	56.1 ^{†*}	59.7	26.92	<.001	.078
Head of household characteristics						
Female	57.9	56.6	54.3	4.04	.133	.032
Non-white	11.2	11.6	9.3	4.04	.115	.031
Homeless	12.1	12.5	11.9	.279	.870	.008
Age of head of household						
Age 18 to 24	31.2	30.5	28.8	3.33	.505	.019
Age 25 to 44	50.9	51.8	51.8			
Age 45 to 64	17.7	17.6	19.5			
Household composition and location						
With more than one adult in household						
With more than one adult in household	18.2 [†]	17.9 [†]	22.2	11.05	.004	.050
Headed by single female	44.8 [†]	44.1 [†]	38.4	14.63	.001	.058
With children	39.1	39.4	36.7	2.63	.268	.024
With children younger than 6	24.2	23.8	23.1	.518	.772	.011
In OMB non-metro county	24.8	27.2 [†]	22.7	7.91	.019	.043
In Census Bureau rural area	16.3	14.8	17.1	2.91	.234	.026
In USDA rural or low-commute area	9.6	9.9	11.4	3.03	.219	.026
Concurrent benefits received						
TANF Cash Assistance	5.5	7.7	6.4	5.46	.065	.035
TANF Related Medical	12.1 [†]	14.1 [†]	9.4	15.75	<.001	.060
Poverty Level Medical	17.6	16.6	16.0	1.41	.495	.018
Childrens Health Program	4.2 [†]	4.7	6.2	6.26	.044	.038
Oregon Health Plan (Standard)	24.2 [†]	4.5 ^{†*}	3.2	427.56	<.001	.312
Employment Related Daycare & related ⁵	4.0 [†]	4.2 [†]	2.2	11.09	.004	.050
Any of the above	49.3 [†]	36.3 ^{†*}	30.8	111.29	<.001	.159
OFSET	17.4 [†]	14.9 [†]	12.4	14.54	.001	.058

1. Except for 'Number of households,' all cell entries are percentage of households.
2. N=1,500 random sample of 98,406 households that received SNAP benefits for at least one month in 2003; households in which the head of household was younger than 18 or older than 64 were omitted (N=1,460).
3. N=1,500 random sample of 87,646 households that received SNAP benefits for at least one month in 2005; households in which the head of household was younger than 18 or older than 64 were omitted (N=1,460).
4. N=1,500 random sample of 138,022 households that received SNAP benefits for at least one month in FY 2009; households in which the head of household was younger than 18 or older than 64 were omitted N=1,470).
5. Category also includes other programs for families that leave the TANF caseload due to employment: TANF extended medical coverage and Post-TANF cash grants.

† = Difference from 2009 is statistically significant (p<=.05); * = difference from 2003 is statistically significant (p<=.05).

Table 3. Comparison of client household work history¹
Year SNAP Receipt Spell

	Began			χ^2	p-value	V
	2003 ²	2005 ³	2009 ⁴			
Household work characteristics (year prior to SNAP receipt) ⁵						
With at least one worker	62.0	59.7	63.1	3.71	.156	.029
With at least one full-time worker	27.4 [†]	25.9 [†]	32.0	14.81	.001	.058
With at least one full-year, full-time worker ⁶	15.3 [†]	17.3 [†]	20.5	14.26	.001	.057
With more than one worker	8.4	7.5	9.4	3.26	.196	.027
Any adult working in SNAP quarter	41.8 [†]	43.0 [†]	35.5	19.91	<.001	.067
Any adult working full time in SNAP quarter	5.7	7.2	5.4	4.84	.089	.033
Earnings drop immediately prior to SNAP episode ⁷	23.6 [†]	20.2 ^{†*}	28.4	26.93	<.001	.078

1. Cell entries are percentage of households.

2. N=1,500 random sample of 98,406 households that received SNAP benefits for at least one month in 2003; households in which the head of household was younger than 18 or older than 64 were omitted (N=1,460).

3. N=1,500 random sample of 87,646 households that received SNAP benefits for at least one month in 2005; households in which the head of household was younger than 18 or older than 64 were omitted (N=1,460).

4. N=1,500 random sample of 138,022 households that received SNAP benefits for at least one month in FY 2009; households in which the head of household was younger than 18 or older than 64 were omitted (N=1,470).

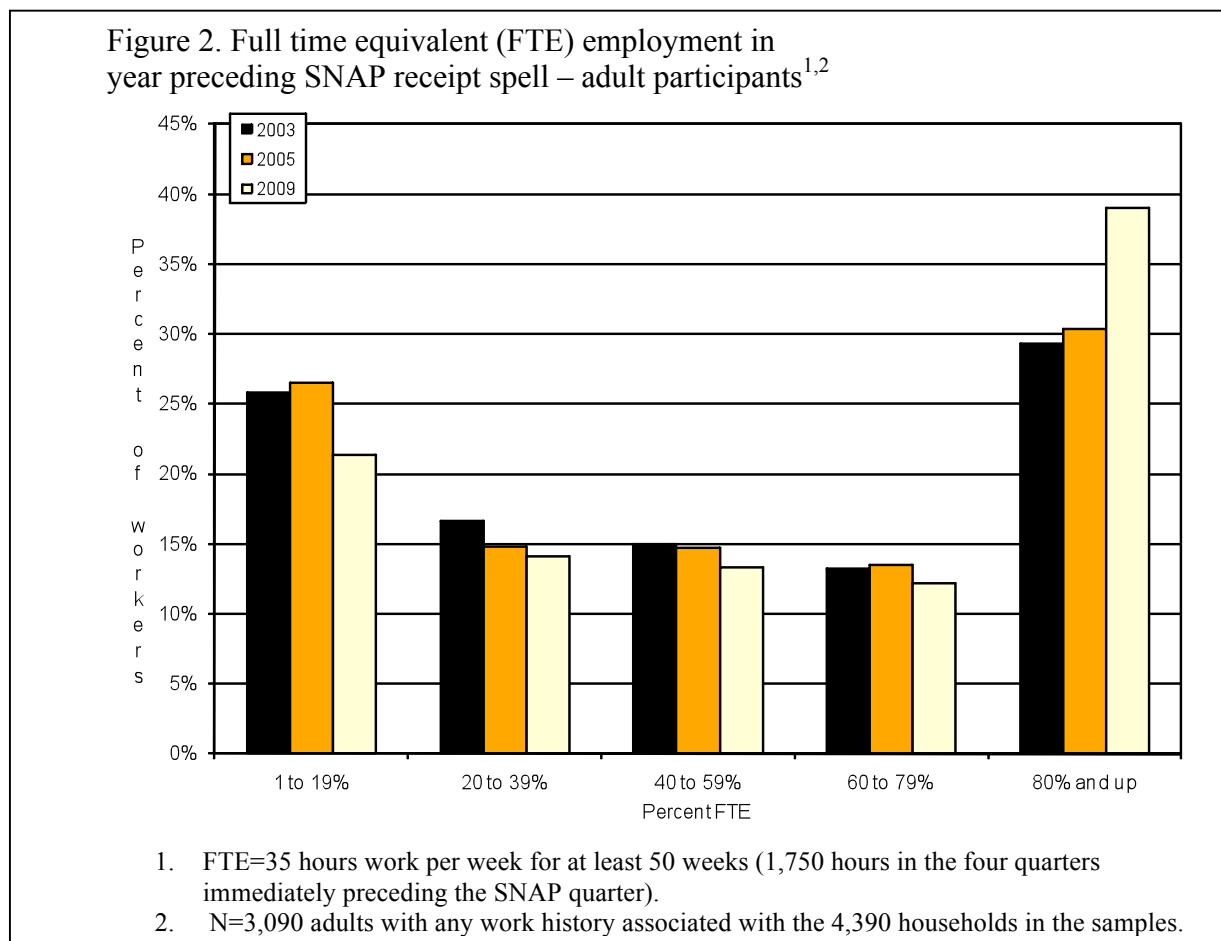
5. Comparison made for the four quarters preceding the quarter in which SNAP benefits began ('SNAP quarter') unless otherwise noted.

6. Workers who had completed four quarters averaging 35 or more hours of work per week as of any quarter during the year preceding the SNAP quarter.

7. Comparison made between the first and second quarters preceding the SNAP quarter.

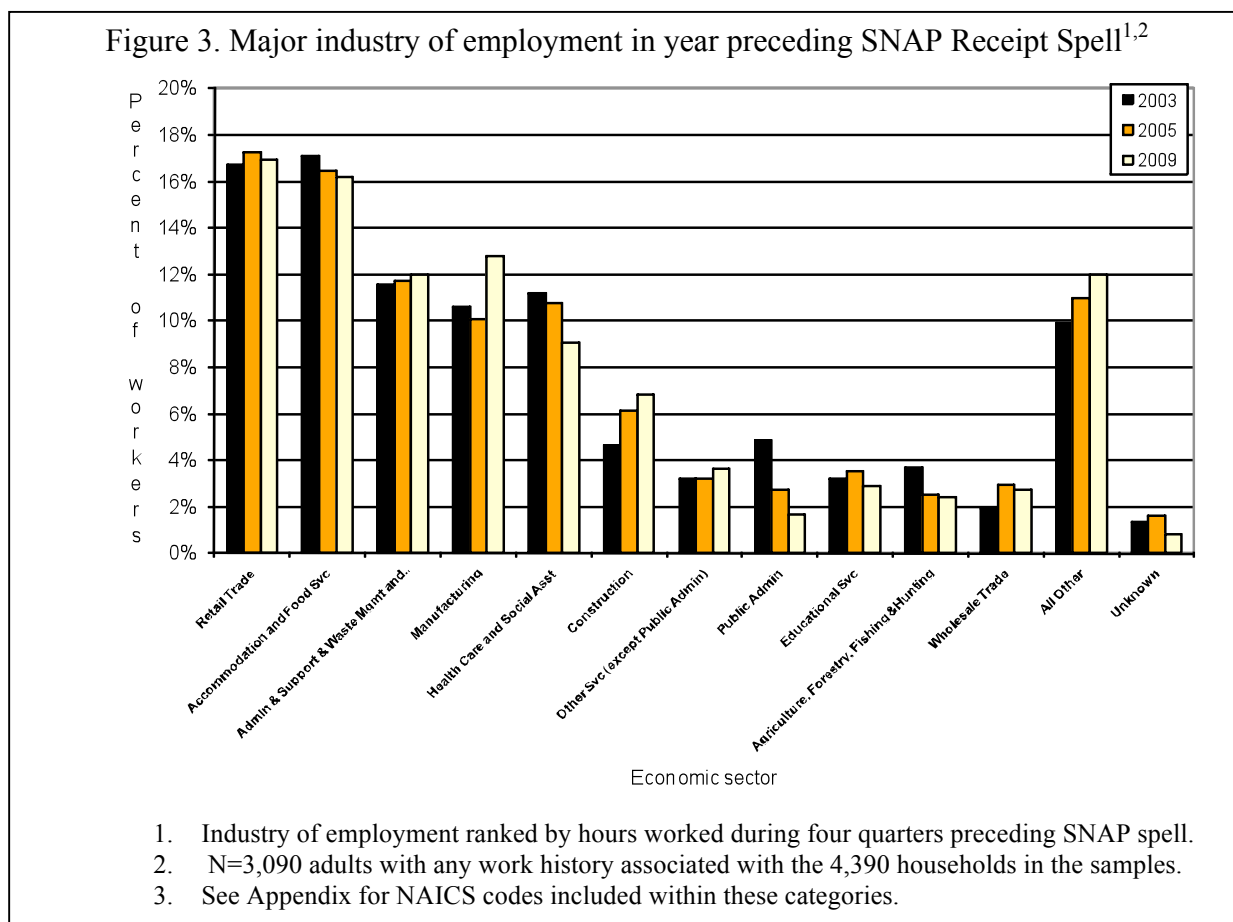
† = Difference from 2009 is statistically significant ($p \leq .05$); * = difference from 2003 is statistically significant ($p \leq .05$).

Work history during the year immediately preceding the SNAP quarter was analyzed at the individual level. Employment was defined in terms of full-time equivalency (FTE). FTE employment was defined as an average of 35 hours per week for 50 weeks during the year preceding the SNAP quarter (1,750 hours). Individuals from the 2009 cohort had more full-time work participation than individuals from the earlier years. Thirty-nine percent of workers in the



2009 cohort worked 80% or more FTE compared to 29% in 2003 and 30% in 2005. Conversely, a smaller percentage of the 2009 cohort worked in each of the part-time categories when compared to the earlier years (Figure 2).

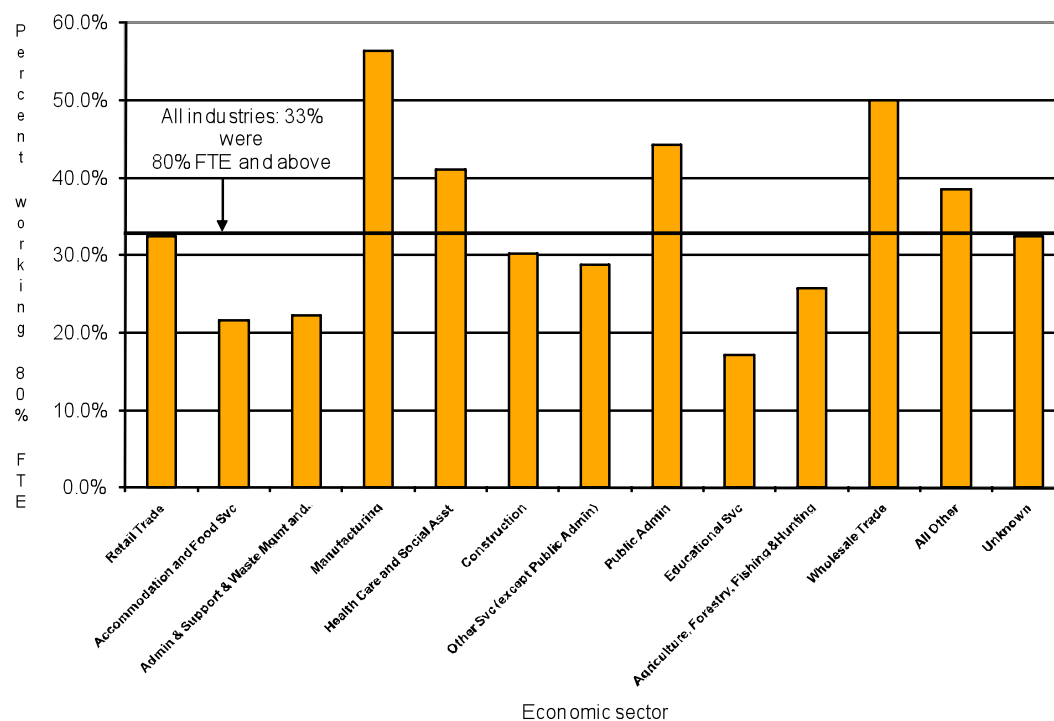
The largest shares of workers in all cohorts were employed in retail trade or accommodation and food services. Combined, these sectors were the major source of employment for 34% of workers in all samples. Construction and manufacturing were the major source of employment for 20% of workers in the 2009 cohort compared to 15% in 2003 and 16% in 2005. Health care, social assistance and public administration were the major source of employment for 11% of workers in the 2009 cohort compared to 14% in 2005 and 16% in 2003 (Figure 3).



Some of the sectors in which individuals in the cohorts commonly worked were least likely to be associated with full-time work. One-third of workers in all sectors and cohorts were employed at 80% FTE and above, but just over 20% of those employed in the accommodation and food services or administrative/support sectors were employed full-time. The sector providing the most full-time work was manufacturing, where nearly 60% of those employed worked full-time (Figure 4).

Table 3 and Figures 2 through 4 do not take into account whether households and individuals were involved in a separate SNAP receipt spell during the year prior to the spell captured in the sample (the period in which work participation was measured). Moreover, employment data are reported by quarter, so any earnings during the SNAP quarter could have been earned before, during, or after the receipt spell began. Similarly, any earnings during the

Figure 4. Percent working 80% + FTE by major industry of employment in year preceding SNAP receipt spell^{1,2} - all sample years



1. Industry of employment ranked by hours worked during four quarters preceding SNAP spell.
2. N=3,090 adults with any work history associated with the 4,390 households in the samples.
3. See Appendix for NAICS codes included within these categories.

same quarter that a SNAP receipt spell ended could have been earned before, during, or after the spell ended. To get a clearer view of earnings before, during, and after a SNAP receipt spell, an analysis was performed on a subset of the 2003 and 2005 samples. Sufficient time has elapsed to allow such an analysis of these earlier cohorts.

The subset was constructed by starting with the households headed by adults aged 18 to 64 (N=2,920). Based on the sensitivity analysis described in the *Data and sampling* section, above, multiple receipt spells separated by less than six months had been combined into one unbroken receipt spell. These records were omitted from the subset because it would be difficult to determine whether there was employment during the receipt spell versus between receipt

Table 4. Comparison of client household work history before, during and after SNAP receipt spell
Work period in relation to SNAP receipt spell¹

	Before (4 quarters)	During ²	After (1 quarter) ³	After (2 quarters) ³	After (3 quarters) ³	After (4 quarters) ³
Household work characteristics						
Number of households	1,755	928	1,114	1,054	958	896
With at least one worker	57.5	82.3	76.9	76.5	75.4	75.1
With at least one full-time worker	25.1	26.1	32.6	33.9	34.1	35.5
With at least one full-year, full-time worker	17.4	11.6	13.3	18.5	26.7	30.7
With more than one worker	6.7	7.0	7.1	7.8	8.8	9.2
Industry of major employment for household ⁴						
Construction or manufacturing	9.7	11.4	15.1	16.0	16.2	16.1
FIRE, info, prof/tech, mgmt	4.1	5.3	5.5	4.5	4.7	4.6
Administrative/support	7.2	13.0	9.5	9.4	7.6	8.3
Educational, health, social services	8.0	13.5	10.9	11.9	11.9	11.8
Leisure and hospitality	9.5	13.0	10.8	10.6	10.9	10.8
Trade or transportation	13.2	21.4	18.2	17.0	17.0	16.3
Mean quarterly wage (1982-84 dollars) ⁵	\$1,958	\$1,495	\$2,274	\$2,261	\$2,367	\$2,468
Median months on caseload	7 ⁶	12	6	6	6	6

1. N=1,755 subset of the 3,000 randomly-selected 2003 and 2005 households. Cell entries are percentage of the number of households described at the top of the respective column unless otherwise noted.
2. Excludes the SNAP start and end quarters.
3. Households remaining off caseload for one, two, three, or four quarters following the quarter in which the SNAP receipt spell ended.
4. See Appendix for NAICS codes included within these categories.
5. Quarterly wages are per worker rather than per household.
6. Median months on caseload for all 1,755 households.

spells. After omitting these records, 2,125 remained. From those, households that were on their first SNAP receipt spell or had returned to SNAP after at least four quarters of absence were chosen (N=1,755). From that group of households, individuals who were members of the household for the entire receipt spell were chosen (N=2,033). Work history on these individuals was assembled for the 1,755 households.

There was little difference in work participation between the subset and the overall

samples with respect to work participation before SNAP. A comparison of Tables 3 and 4 shows that the percentages of households with at least one worker, one full-time worker, and one full-year, full-time worker were similar. The most notable difference pertained to mean quarterly earnings. Workers in the subset averaged \$1,958 per quarter compared to \$1,799 per year in the 2003 sample and \$1,872 per year in the 2005 sample (all 1982-84 constant dollars). Since the subset omitted households that were part of a SNAP spell during the year prior to the spell captured in the sample, it is no surprise that the subset's average earnings were higher.

Just over half of the subset remained on the caseload for at least three quarters, long enough to determine whether or not they worked and received SNAP simultaneously. These 928 households had a median time on caseload of 12 months, nearly double the median for all households in the subset (7 months). More than 80% of these 928 households had at least one worker, 26% had at least one full-time worker, and 11.6% had at least one full-year, full-time worker. At \$1,495, their average quarterly earnings were lower than for the whole subset prior to SNAP (\$1,958), and they had a higher percentage of employment in retail trade, wholesale trade, or transportation (21.4%) than the entire subset prior to SNAP (13.2%). Employed recipients risk losing eligibility for SNAP if they voluntarily quit their jobs. Some unemployed recipients are required to participate in OFSET. However, only 15% of the 928 households that received SNAP while employed participated in OFSET, so their high work participation cannot be attributed to OFSET participation alone. The work characteristics of these 928 household suggest that a significant portion of long-time SNAP recipients are working poor.

About three quarters of households had at least one member employed after ending their SNAP participation. With every additional quarter, the percentage of households with full-time workers or multiple workers increased along with average quarterly earnings (Table 4).

The percentage of workers employed in each sector increased during the SNAP spell compared to the previous year, particularly in the trade and transportation group. After households left SNAP, the percentage employed in nearly all sectors declined. The major exception was in the manufacturing and construction group where the percentage employed increased by nearly five percentage points (Table 4). This suggests that employment in manufacturing or construction is one of the key ways that SNAP households are able to lift themselves out of poverty.

Discussion – Part 1

SNAP households in the samples were compared to some of the correlates of poverty noted in other studies and in official poverty statistics. During the three cohort years Oregon households headed by single females with children comprised between 6.1 and 6.7% of all households and between 87 and 88% of the population was classified as ‘white alone.’ About 22% of Oregonians were located outside of metropolitan areas during the sample years (Portland State University, Population Research Center, 2010b). In comparison, about 22% of SNAP households in 2003 and 2005 were headed by single females with children in the household, and 17.8% had this composition in 2009 (not shown). Among persons receiving SNAP for whom race was known, between 87 and 89% were classified as ‘white’ (not shown). About 26% of SNAP participants were located outside of metro areas. As expected, households headed by single females were overrepresented among SNAP households when compared to all Oregon households. The racial and geographic distribution of persons receiving SNAP, however, was similar to all Oregonians. SNAP and ACS data are not strictly comparable, as the SNAP samples omitted households headed by seniors or those with disabled persons. The difference with respect to household structure is large enough to be maintained even if senior and disabled

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households had been included in the SNAP data.

The full intake cohorts followed the expected pattern of increase during recessions and decrease during recoveries. In the mild recession year of 2003 98,406 households began receipt spells, in the expansionary year 2005 87,646 families started spells, and in the severe recession year of FY 2009, 138,022 household started receipt spells. As expected, households that began receipt spells during recessionary years were more likely to have undergone a recent wage cut than during the expansionary year. Nearly 28.4% of the large 2009 cohort experienced a wage cut compared to 20.2% of the smaller 2005 cohort. These estimates indicate that more than twice as many households experienced a wage cut prior to SNAP in 2009 compared to 2005.

Around 60% of SNAP households had some work participation prior to their receipt spell, but they worked fewer hours than U.S. workers overall. U.S workers have averaged between 33 and 34 hours per week for the past decade. Workers in the leisure and hospitality sector averaged about 25 hours per week and those in retail trade averaged about 30 hours per week for the past decade (U.S. Bureau of Labor Statistics, 2010). These figures are not strictly comparable to workers in the SNAP samples, but they are helpful for context. Workers in the SNAP samples averaged about 20 hours per week of work, those whose primary employment was in the leisure and hospitality sector averaged 16 hours per week, and those whose primary employment was in retail trade averaged about 20 hours per week (not shown). In addition, SNAP workers were overrepresented in the retail trade and leisure and hospitality sectors. The food and accommodation sector represented 8.7% of total nonfarm employment in Oregon during 2008, and retail trade comprised 11.4% for a combined total of 20.1% (Oregon Employment Department, 2010). This compares to 34% of workers in the SNAP samples. So SNAP workers' lower average hours of work was partially due to their concentration in retail

trade and leisure and hospitality – sectors associated with part-time employment.

Among the two earlier cohorts, the subgroup of households with the highest work participation (82%) were those with receipt spells of sufficient length to allow the determination that work was being performed at the same time that SNAP benefits were being received. This subgroup had lower quarterly earnings and a higher percentage of employment in trade and transportation than other subgroups with which it was compared (Table 4). This finding belies the popular notion that SNAP beneficiaries do not work, and it illustrates some of the characteristics of working poor households.

Full-time work, especially in manufacturing and construction, was associated with staying off SNAP once a receipt spell ended. Households who ended their SNAP receipt and stayed off SNAP for at least a year increased their work participation and earnings in each successive quarter after leaving the SNAP caseload. Employment in construction and manufacturing increased by four percentage points in the first quarter after leaving SNAP, suggesting that obtaining employment in those sectors may have been the key to earning the household out of poverty.

The 2009 cohort was distinct in its household composition, earnings, and employment participation; characteristics that are not independent of each other. The 2009 cohort had a lower percentage of single-female headed households and a higher percentage of multi-adult households. Average household earnings were at least 24% higher in the 2009 cohort compared to the earlier cohorts, even when controlling for inflation. The 2009 cohort was more likely to have undergone a substantial drop in earnings prior to the SNAP spell. Nearly 40% of adults in the 2009 cohort had worked full-time or nearly so in the year prior to the SNAP spell, higher by ten percentage points than either of the other cohorts.

The 2009 cohort was also distinct in the number and percentage of males involved. The designated head of household for SNAP is simply the contact for DHS with respect to SNAP benefits. Adults other than the ‘head’ in SNAP households are twice as likely to be male, and the 2009 cohort was composed of a higher percentage of multi-adult households. The 2009 cohort was much more likely to have a member who worked full time for one or more quarters during the past year, and 59% of the full-year full-time workers and 57% of the full-time workers in the 2009 cohort were male. Construction and manufacturing constituted a higher percentage of the industrial mix of 2009 SNAP participants, and employment in these industries among SNAP recipients in the sample years was overwhelmingly male (78%). Manufacturing employed the highest percentage of full-time workers in the samples. These results corroborate the observation that job loss among males hit early and hit hard during the current recession (Beleiciks, 2009).

Studies by Blank (1997a), Freeman (2001), and others found that public assistance caseloads increase during economic recessions. The sheer size of Oregon’s 2009 SNAP cohort is painful corroboration of their work. More than 138,000 households began a SNAP receipt spell in 2009, 57% more than in 2005 and 40% more than in 2003. The relatively high incidence of multi-adult households, full-year, full-time workers, households with a recent earnings cut, and erstwhile employment in relatively high paying sectors suggests that the 2009 cohort is composed of a great number of households that would normally be considered immune from falling into poverty.

Results – Part 2- Comparison of Household Types

Caseload size is determined by the number of cases opened and the length of time that they remain open. The duration of Oregon’s high SNAP caseload depends not only on how long intakes remain at elevated levels, but also on the length of the receipt spells. If SNAP is a

reasonable representation of Oregon's poor households, the question might be rephrased as, 'how long will relatively large numbers of Oregonians continue to slip into poverty, and how long will they remain poor?' In order to answer this question, we used the 2003 and 2005 cohorts.

Sufficient time has elapsed to classify households in these cohorts according to spell length and recidivism. The goal was to find determinants of spell length and recidivism from among characteristics that are known at the time a case opens. These determinants could then be used to classify the 2009 cohort in terms of spell length and recidivism.

The household types used in this analysis were modeled on the spell length typology of *transitional*, *intermittent*, and *persistent poverty* advanced by Blank (1997b) and Duncan et al. (1984). SNAP households were divided into *long-term*, *short-term*, and *repeat*. These definitions were developed in the sensitivity analysis (Table 1). In that exercise, six different definitions of recidivism and two spell length criteria (50th and 75th percentiles) were analyzed using multinomial logistic regression. This section uses the specification from the sensitivity analysis that yielded the best result: long-term households had spell lengths at or above the 75th percentile of 25 months. Short-term households had spell lengths below the 75th percentile, and repeat households recidivated after an absence from the caseload of at least six months. Spell length criteria higher than the 75th percentile were not part of the sensitivity analysis because there would be too few cases classified as long-term to provide meaningful prediction of long-term cases in a multinomial logistic regression (Hosmer & Lemeshow, 2000).

Although classifying the 2009 cohort using an analysis from earlier years would not be conclusive, it could provide some insight into how quickly the current SNAP caseload might decline once an economic recovery is established. For example, a large percentage of short-term households in the 2009 cohort might suggest a fairly rapid decline in the caseload as households

gain employment as it becomes available. A large percentage of repeat or long-term cases might suggest more of a residual effect such as occurred after the 2001-03 recession (Figure 1).

The 2003 and 2005 cohorts were classified according to receipt spell length and recidivism. Long-term households were more common in the 2005 cohort than in the 2003 cohort. Repeat households were more common in 2003 than in 2005. The percentage of short-term households did not vary much between the two years. Of note is that a larger share of repeat households from each cohort was on the caseload as of August 2009 compared to December 2006 (Table 5). Oregon's unemployment rate was 5.2% in December 2006, and it had been below 6% for more than a year. The unemployment rate for August 2009 was 12%, and it had been in double-digits for seven months. Part 1 of this analysis showed that a significant percentage of the 2009 cohort had experienced a recent drop in earnings, and nearly half had been on SNAP in previous years. A cohort's recidivism normally declines over time, similar to the pattern shown for long-term households. For example, the percentage of 2003's long-term

Table 5. Sample distribution by client household type¹

	Long-term ²	Repeat ³	Short-term ⁴	Total
2003 Sample ⁵	17.7	44.5	37.7	1460
Percent on caseload as of				
December 2004	95.0	44.2	10.7	40.5
December 2006	73.4	37.2	0.0	29.6
August 2009	48.6	51.5	0.0	31.6
2005 Sample ⁵	24.3	33.8	41.8	1460
Percent on caseload as of				
December 2004	7.0	5.5	4.7	5.5
December 2006	93.0	34.2	9.3	38.1
August 2009	65.9	65.8	0.0	38.3
Combined samples	21.0	39.2	39.8	2920

1. N=1,500 random sample of 98,406 households that started SNAP receipt spells in 2003 and N=1,500 random sample of 87,646 households that started SNAP receipt spells in 2005. Households headed by children or adults older than 65 were omitted. Final N=1,460 for each year. All numbers are percentages unless otherwise note.
2. Households with receipt spell length of at least 25 months; if receipt spell ended, household had not returned to the caseload.
3. Households that remained off caseload for at least six months before returning.
4. Households with receipt spell length of 24 or fewer months; household had not returned to the caseload.
5. Total number of cases is shown in 'Total' column

households remaining on the caseload declined from 95% in December 2004 to 48.6% in August 2009 (Table 5). A deviation from this typical path that coincides with a period of high unemployment suggests a relationship between job loss and SNAP recidivism.

A higher percentage of long-term households were headed by females or single females and had young children. They had more participation in all assistance programs with the exception of Children's Health, and they had less work participation compared to the other two groups. Repeat households occupied the middle ground between short and long-term households with respect to the percentage headed by females or single females and the percentage with at least one worker in the household. Repeat households were distinct in terms of being most likely to be homeless and to have the head of household work primarily in the leisure and hospitality sector. They were least likely to have older children. Short-term households were least likely to be headed by females and most likely to have at least one worker in the household (Tables 6 and 7). Short-term households with workers earned \$6,779 in the year prior to the SNAP spell, more than either repeat households (\$6,062) or long-term households (\$6,131) (all 1982-84 constant dollars). It is important to note that repeat and short-term households were indistinguishable from each other and distinct from long-term households in nearly all measures of work participation for which there were significant differences between the groups.

A multinomial logistic regression was used to determine if households could be accurately classified in terms of spell length and recidivism at the time the SNAP spell began. Short-term households were chosen as the reference category. The model yielded an R-squared of .134 and an overall accuracy rate of 49%, surpassing the proportional by chance criterion of 44.6%. The model was able to correctly classify over half of repeat and short-term households, but only 20% of long-term households (Table 8).

Table 6. Profile of sample households by type¹

Variable	Long-term ²	Repeat ³	Short-term ⁴	χ^2	p-value	V
Number of households	614	1144	1162			
Head of household characteristics						
Female	70.8 [†]	56.8 ^{†*}	50.4	68.54	<.001	.153
Non-white	13.8	10.5	11.0	4.17	.124	.040
Homeless	9.6	16.3 ^{†*}	9.9	26.91	<.001	.096
Age of head of household ⁴				30.65	<.001	.072
18 to 24	28.0	34.7	28.7			
25 to 34	25.4	28.1	29.0			
35 to 44	24.6	22.9	23.5			
45 to 54	16.8	12.3	14.8			
55 to 64	5.2	2.0	4.0			
Household composition and location						
With more than one adult in household	16.1	17.3	19.8	4.35	.113	.039
Headed by single female	57.5 [†]	43.5 ^{†*}	38.5	59.53	<.001	.143
With children younger than 6	31.9 [†]	21.9 [*]	21.9	26.96	<.001	.096
With children 6 to 17	29.5 [†]	20.1 ^{†*}	24.3	19.70	<.001	.082
In OMB non-metro county	26.1	25.9	26.1	.006	.997	.001
In Census Bureau rural area	18.6	14.3	15.3	5.71	.058	.044
In USDA rural or low-commute area	10.4	9.2	10.0	.812	.666	.017
Concurrent benefits received & related ⁵						
TANF Cash Assistance	12.5 [†]	4.6 [*]	5.4	44.89	<.001	.124
TANF Related Medical	21.7 [†]	10.6 [*]	11.1	49.95	<.001	.131
Poverty Level Medical	23.3 [†]	17.8 ^{†*}	13.1	30.28	<.001	.102
Childrens Health Program	3.6	4.8	4.6	1.52	.469	.023
Oregon Health Plan	16.4	14.7	12.8	4.52	.104	.039
Employment Related Daycare				9.98	.007	.058
Any of the above	6.4	3.4	3.6			
OFSET	55.0 [†]	41.3 [*]	37.8	50.58	<.001	.132
Ever on TANF	12.9 [†]	17.6 [*]	16.5	6.71	.035	.048
	27.2 [†]	18.8 [*]	15.7	34.1	<.001	.108

1. N=1,500 random sample of 98,406 households that started SNAP receipt spells in 2003 and N=1,500 random sample of 87,646 households that started SNAP receipt spells in 2005. Households headed by children or adults older than 65 were omitted. Final N=1,460 for each year. All numbers are percentages unless otherwise noted.

2. Households with receipt spell length of at least 25 months; if receipt spell ended, household had not returned to the caseload.

3. Households that remained off caseload for at least six months before returning.

4. Households with receipt spell length of 24 or fewer months; household had not returned to the caseload.

5. Category also includes other programs for families that leave the TANF caseload due to employment: TANF extended medical coverage and Post-TANF cash grants.

† = Difference from short-term is statistically significant (p<=.05); * = difference from long term is statistically significant (p<=.05).

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Table 7. Comparison of client household work history¹

	Household type			χ^2	p-value	V
	Long-term ²	Repeat ³	Short-term ⁴			
Household work characteristics ⁵						
With at least one worker	53.9 [†]	65.8 ^{†*}	69.6	25.0	<.001	.093
With at least one full-time worker	22.6	28.8 [*]	26.6	7.88	.019	.052
With at least one full-year, full-time worker ⁶	12.9 [†]	17.6 [*]	16.8	6.86	.032	.048
Any worker during SNAP quarter	34.4 [†]	45.5 [*]	43.7	21.42	<.001	.086
Any full-time worker during SNAP quarter	3.9 [†]	6.3 [*]	7.9	10.78	.005	.061
Employment history in seasonal industry	13.0	16.1	17.3	5.50	.064	.043
Earnings drop immediately prior to SNAP episode ⁷	19.9	24.0	20.9	5.20	.074	.042
Industry of major employment for head of household ⁸						
Construction or manufacturing	7.2	9.3	8.8	2.29	.319	.208
FIRE, info, prof/tech, mgmt	4.1	3.6	4.4	.98	.613	.018
Administrative/support	6.0	7.5	7.0	1.37	.504	.022
Educational, health, social services	10.4	8.7	8.2	2.55	.279	.030
Leisure and hospitality	9.6	13.2 ^{†*}	9.8	8.45	.015	.054
Trade, warehousing, transportation	8.6 [†]	14.5 [*]	12.0	13.0	.002	.067

1. N=1,500 random sample of 98,406 households that started SNAP receipt spells in 2003 and N=1,500 random sample of 87,646 households that started SNAP receipt spells in 2005. Households headed by children or adults older than 65 were omitted. Final N=1,460 for each year. All numbers are percentages unless otherwise noted.
2. Households with receipt spell length of at least 25 months; if receipt spell ended, household had not returned to the caseload.
3. Households that remained off caseload for at least six months before returning.
4. Households with receipt spell length of 24 or fewer months; household had not returned to the caseload.
5. Comparison made for the four quarters preceding the quarter in which SNAP benefits began ('SNAP quarter') unless otherwise noted.
6. Workers who had completed four quarters averaging 35 or more hours of work per week as of any quarter during the year preceding the SNAP quarter.
7. Comparison made between the first and second quarters preceding the SNAP quarter.
8. See Appendix for NAICS codes included within these categories.

† = Difference from short-term is statistically significant ($p \leq .05$); * = difference from long-term is statistically significant ($p \leq .05$).

Table 8. Model 1: Logistic Regression Classification Table Using all Variables¹

Observed	Predicted			Percentage correct
	Long-term	Repeat	Short-term	
Long-term	108	237	198	19.9
Repeat	65	605	388	57.2
Short-term	57	379	574	56.8
Overall percentage	8.8	46.8	44.4	49.3 ²

1. Dependent variable: household type where short-term was the reference category (see Tables 6 and 7 for definitions). See *Data and Sampling* section, above for explanatory variable detail. N=2,611 cases after 309 cases with missing data were eliminated.
2. Proportional by chance criterion=44.6%; Nagelkerke R² =.134

With all other variables held constant, a female head of household, receipt of TANF cash benefits, or receipt of Poverty Level Medical benefits doubled or nearly doubled the odds of being a long-term versus short-term household. The odds of being a long-term household increased 1.7 times for each additional receipt spell accrued, 1.4 times for being in a Census-designated rural area, and 1.2 times for every unit increase in the age category of the head of households. Any adult working during the SNAP quarter decreased the odds of being a long-term household by 40%, and any adult working full-time during the SNAP quarter decreased the odds of being long-term by nearly half (Table 9).

With all other variables held constant, the odds of being a repeat versus short-term household were increased 1.7 times by homelessness or receiving the Poverty Level Medical benefit, 1.6 times for each additional receipt spell or for receiving the Oregon Health Plan (OHP) Standard benefit, and 1.5 times if the head of household was female. The odds of being a repeat versus short-term household decreased by 12% for every unit increase in the age category of the head of household (Table 10).

The model coefficients were applied to the FY 2009 sample cohort and each case was classified according to household type. This process was repeated using coefficients based on

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90% confidence limits. The model proportioned 11.3% of 2009 households as long-term, 40.3% as repeat, and 48.4% as short-term (Table 11). This is similar to the proportions assigned to the earlier cohorts: 8.8% as long-term, 46.8% as repeat, and 44.4% as short-term (Table 8).

However, the proportions generated by using the coefficients from the 90% confidence bounds rendered swings so wide that little if any confidence should be afforded to the 2009 estimates.

The proportion of long-term households ranged from 0% to 44%, repeat households ranged from 1% to 55%, and short-term households ranged from 2% to 99% (Table 11).

Table 9. Full Model: Logistic Regression Predicting Household type¹

Comparison: Long-term vs. Short-term	β	Standard Error	Wald χ^2	<i>p</i> -value	Odds
Constant	-2.637	0.26	104.55	<.001	
Number of receipt spells	0.568	0.08	45.85	<.001	1.76
Head of household characteristics					
Female head of household	0.773	0.13	35.49	<.001	2.17
Non-white head of household	0.294	0.17	2.92	0.088	1.34
Categorical age of head of household	0.168	0.05	9.85	0.002	1.18
Household structure and location					
Total size of household	0.130	0.11	1.49	0.222	1.14
More than one adult in household	-0.317	0.22	2.16	0.142	0.73
Any children younger than 6 in household	-0.046	0.21	0.05	0.827	0.95
Any children aged 6 through 17 in household	-0.398	0.23	2.90	0.088	0.67
Homeless at start of receipt spell	0.194	0.19	1.06	0.302	1.21
Located in OMB Micro or Non-core county	-0.002	0.14	0.00	0.988	1.00
Located in Census rural area	0.331	0.16	4.13	0.042	1.39
Located in ERS rural/low commute area	-0.174	0.21	0.66	0.415	0.84
Benefits received					
On TANF cash grant at start of SNAP	0.686	0.29	5.46	0.019	1.99
On TANF medical at start of SNAP	0.293	0.31	0.89	0.346	1.34
On Poverty Level Medical at start of SNAP	0.647	0.24	7.25	0.007	1.91
On Childrens Health Plan at start of SNAP	-0.409	0.37	1.22	0.270	0.66
On Oregon Health Plan at start of SNAP	0.087	0.25	0.12	0.732	1.09
On ERDC or Post-TANF at start of SNAP	-0.004	0.31	0.00	0.990	1.00
Any of the above benefits	0.156	0.27	0.34	0.562	1.17
Any history of TANF cash grant	0.109	0.18	0.35	0.553	1.12
OFSET participation	-0.015	0.16	0.01	0.923	0.98
Household work history					
Any adult with work history	-0.325	0.31	1.09	0.297	0.72
Quarters worked per working adult	0.157	0.09	2.93	0.087	1.17
Any adult with at least one full-time quarter	-0.066	0.28	0.06	0.810	0.94
Full-time quarters per working adult	0.104	0.14	0.58	0.445	1.11
Any full-year full-time worker	-0.076	0.27	0.08	0.779	0.93
Any employment in seasonal industry	-0.080	0.19	0.18	0.670	0.92
Any wage cut prior to SNAP receipt	-0.014	0.17	0.01	0.938	0.99
Any adult working in SNAP quarter	-0.513	0.18	8.47	0.004	0.60
Any adult working full-time in SNAP quarter	-0.596	0.31	3.78	0.052	0.55
Head of household work history in...					
Construction or manufacturing	0.214	0.30	0.51	0.476	1.24
FIRE, Info, Professional/Technical, etc	0.084	0.33	0.06	0.800	1.09
Administration/support services	0.080	0.30	0.07	0.794	1.08
Education, health, or social services	0.337	0.27	1.55	0.213	1.40
Leisure and hospitality	0.139	0.27	0.26	0.611	1.15
Trade or transportation	-0.066	0.27	0.06	0.809	0.94
Total wages in previous year (constant \$)	<.001	<.001	1.09	0.296	1.00

1. Dependent variable: household type where short-term was the reference category and was compared to long-term households (see Tables 6 and 7 for definitions). See *Data and Sampling* section, above for explanatory variable detail. Nagelkerke $R^2 = .134$.

Table 10. Full Model: Logistic Regression Predicting Household type¹

Comparison: Repeat vs. Short-term	β	Standard Error	Wald χ^2	<i>p</i> -value	Odds
Constant	-0.867	0.20	17.96	<.001	
Number of receipt spells	0.477	0.07	44.68	<.001	1.61
Head of household characteristics					
Female head of household	0.368	0.10	12.77	<.001	1.45
Non-white head of household	0.014	0.15	0.01	0.923	1.01
Categorical age of head of household	-0.123	0.04	8.00	0.005	0.88
Household structure and location					
Total size of household	0.003	0.10	0.00	0.978	1.00
More than one adult in household	-0.142	0.19	0.57	0.449	0.87
Any children younger than 6 in household	-0.162	0.19	0.75	0.386	0.85
Any children aged 6 through 17 in household	-0.287	0.21	1.87	0.171	0.75
Homeless at start of receipt spell	0.535	0.14	14.43	<.001	1.71
Located in OMB Micro or Non-core county	0.082	0.12	0.48	0.488	1.09
Located in Census rural area	0.039	0.14	0.08	0.783	1.04
Located in ERS rural/low commute area	-0.113	0.18	0.40	0.529	0.89
Benefits received					
On TANF cash grant at start of SNAP	0.058	0.29	0.04	0.842	1.06
On TANF medical at start of SNAP	0.362	0.29	1.59	0.207	1.44
On Poverty Level Medical at start of SNAP	0.533	0.21	6.18	0.013	1.70
On Childrens Health Plan at start of SNAP	0.280	0.30	0.89	0.345	1.32
On Oregon Health Plan at start of SNAP	0.471	0.23	4.22	0.040	1.60
On ERDC or Post-TANF at start of SNAP	-0.110	0.28	0.15	0.699	0.90
Any of the above benefits	-0.206	0.24	0.75	0.388	0.81
Any history of TANF cash grant	0.178	0.15	1.34	0.247	1.19
OFSET participation	0.191	0.12	2.38	0.123	1.21
Household work history					
Any adult with work history	0.085	0.24	0.12	0.726	1.09
Quarters worked per working adult	0.107	0.07	2.35	0.125	1.11
Any adult with at least one full-time quarter	0.209	0.21	0.98	0.322	1.23
Full-time quarters per working adult	-0.067	0.11	0.40	0.527	0.94
Any full-year full-time worker	0.250	0.21	1.42	0.233	1.28
Any employment in seasonal industry	-0.104	0.14	0.55	0.460	0.90
Any wage cut prior to SNAP receipt	0.022	0.13	0.03	0.868	1.02
Any adult working in SNAP quarter	-0.206	0.14	2.22	0.136	0.81
Any adult working full-time in SNAP quarter	-0.208	0.21	0.94	0.332	0.81
Head of household work history in...					
Construction or manufacturing	0.161	0.23	0.50	0.478	1.17
FIRE, Info, Professional/Technical, etc	-0.268	0.27	0.97	0.324	0.76
Administration/support services	-0.074	0.23	0.10	0.752	0.93
Education, health, or social services	-0.045	0.22	0.04	0.839	0.96
Leisure and hospitality	0.115	0.21	0.31	0.577	1.12
Trade or transportation	0.057	0.20	0.08	0.775	1.06
Total wages in previous year (constant \$)	<.001	<0.001	0.99	0.320	1.00

1. Dependent variable: household type where short-term was the reference category and was compared to repeat households (see Tables 6 and 7 for definitions). See *Data and Sampling* section, above for explanatory variable detail. Nagelkerke $R^2 = .134$.

Table 11. Classification of 2009 Sample Intake Cohort with 90% Confidence Intervals¹

	Lower CI	Estimate	Upper CI
Long-term ²	0.0	11.3	43.8
Repeat ³	0.8	40.3	54.5
Short-term ⁴	99.2	48.4	1.8
Total	100	100	100

1. N=1,500 random sample of 138,022 households that received SNAP benefits for at least one month in FY 2009; households in which the head of household was younger than 18 or older than 64 were omitted, as were households that entered the cohort in Q2 2009 and those with missing race data (final N=960). Numbers are percentage of sample cases.
2. Households with receipt spell length of at least 25 months that do not return to the caseload.
3. Households that remain off caseload for at least six months before returning.
4. Households with receipt spell length of 24 or fewer months that do not return to the caseload.

Discussion – Part 2

About 20% of the earlier cohorts were classified as long-term, and long-term households were characterized by many of the correlates of structural poverty: single-female headed household, small children, other public assistance benefits that require deep poverty for qualification, rural location, and little work participation. More than one-quarter of long-term households were located in non-metropolitan areas. These households in particular possessed many of the characteristics identified with structural poverty theory when applied to rural areas. The logistical challenges facing poor, single mothers in rural areas have been well documented: lack of public transportation, affordable day-care, and employment that pays enough to make household members better off than if they were to continue receiving public assistance. There was a larger percentage of long-term households in the 2005 cohort, a period of economic expansion, than in the 2003 cohort, a period of recession. This supports the idea that the causes of poverty in these households are not tied to the business cycle as would be expected among the persistently poor described by Blank (1997b) and Duncan et al. (1984).

Separating short-term from repeat households was more difficult. In terms of most

employment characteristics, repeat and short-term clients were indistinguishable – particularly in terms of full-time work and full-year, full-time work. There were some differences. Repeat households were more likely to be employed in leisure and hospitality, a sector that is associated with low pay and part-time work. Intermittently poor households have been described as vulnerable to economic recession (Freeman, 2001; Popple & Leighninger, 2001), and repeat households did comprise the largest share of the 2003 cohort, a recessionary period. While repeat households possessed many of the characteristics associated with the working poor, it would be difficult to argue that short-term households did not possess most of those same characteristics.

Prior studies of poverty spell length found the largest share of poor households were temporarily or transitionally poor (Blank 1997b; Duncan, 1984). However, the current analysis found equal percentages of short-term and repeat households. Some of this is due to the way households were classified for the current study. By increasing the minimum number of months between receipt spells, more households would have been classified as short-term than repeat. Still, the 2008-10 recession probably caused more recidivism and more households to be classified as repeat than would have been the case had no recession or a milder recession occurred. This is apparent from the increase in recidivism that occurred in 2009, interrupting the normal pattern of decreasing recidivism over time (Table 5).

The model was not able to classify 2009 households with any reliability. There are several possible reasons. First, Part 1 of this analysis provided ample evidence that the 2009 cohort was distinct from the earlier cohorts in key areas such as work participation. In particular, there was a smaller percentage of 2009 households with work participation during the SNAP quarter. This was a significant determinant in distinguishing long-term from short-term

households in the earlier cohorts. However, lack of work during the SNAP quarter may have had more to do with the high unemployment rate during 2009 rather than any characteristics of household members. Second, OHP Standard was a significant determinant of repeat versus short-term for the earlier cohorts, but the plan was closed to new applicants in 2009. Finally, the standard errors for non-significant variables were in many cases larger than the estimated coefficient (tables 9 and 10). The confidence limit coefficients that result from this structure lead to the wide swings in prediction shown in Table 11.

The multinomial regression and the cross-tabular comparisons in tables 6 and 7 suggest that the characteristics known at the time a SNAP spell opens are not the only determinants of household outcomes in terms of spell length and recidivism. While this is a disappointing result for the purpose of prognostication, it is important nonetheless. Other determinants of SNAP spell length and recidivism may be dependent on the environment (improvement in the local job market, for example) and on what occurred in the households *after* the SNAP spell started (job training, for example).

Policy Considerations

During most recessions, Oregon has a higher unemployment rate than the nation. This is true so far during the current recession, it was true during the 2001-03 recession, and it was true during Oregon's worst post-war recession (1982-83). Oregon's economy is heavily reliant on economic sectors that are sensitive to recessions: lumber and wood products, electronics and transportation equipment manufacturing, and international trade. As Oregon's unemployment rate surpasses the nation's during a recession, the number of poor households grows and with it public assistance caseloads like SNAP.

In spite of the obvious and academically established relationship between unemployment

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and public assistance caseloads, there is a persistent societal perception that the unemployed are a different set of people than those on public assistance. The unemployed are hardworking but unlucky, and they are perceived as worthy of society's help through unemployment insurance, job creation, and job training. Conversely, households reliant on public assistance are perceived to rarely work, avoid it whenever possible, and have little interest in it. Helping poor people is often perceived to mean giving them more public assistance and creating more dependency.

Contrary to this perception, this analysis has shown that Oregon's employed *and* unemployed are heavily represented among one of Oregon's largest public assistance programs, SNAP. SNAP is currently serving many households that were employed and not poor until very recently, and a significant percentage of SNAP recipients analyzed in this study worked while they were receiving the benefit. By definition they were working poor.

SNAP households appear to have strong connections to manufacturing and construction employment. Although one-third of workers were primarily employed in retail trade and food and accommodation, a larger percentage of the 2009 cohort had been employed in construction or manufacturing prior to starting SNAP receipt than was typical in the earlier cohorts analyzed. Moreover, obtaining employment in construction or manufacturing appears to have been one of the key factors for households in the earlier cohorts who succeeded in leaving SNAP and remaining off the caseload for at least a year.

This reliance on construction and manufacturing does not bode well for the prospect of a decline in the SNAP caseload even with an economic recovery. With the current high rate of home foreclosures, unsold or vacant housing and commercial inventory, the levels of construction employment Oregon saw prior to the current recession may be many years in the future. Manufacturing in Oregon during the post-war period has been cyclical, and like

manufacturing throughout the U.S. it is subject to being sent offshore. There is a distinct possibility that the jobs created in an economic recovery will not pay as well as those lost in the current recession. Some households may simply move from unemployed and poor to working poor. This scenario could lead to a long-term increase in Oregon's poverty rate.

This potential problem is not without solution. Oregon has programs designed to anticipate job demand and ensure that adequate resources are devoted to training for those jobs. Some of the analyses in this paper could be informative as part of local workforce development planning. These planning efforts could make use of additional macro-level information about a portion the region's target clientele including family structure, location, and the sectors in which they are and were employed. Although it was not part of this study, the location of SNAP households could be incorporated into a local GIS analysis. Spatial analysis relating clusters of SNAP households in relation to child care, school districts, transportation, and training facilities could help ensure that workforce development programs are readily accessible.

With Oregon's public assistance caseloads at record levels, the popular perception that public assistance recipients do not work and do not care to work should be resisted. This analysis shows that most worked prior to receiving public assistance, some worked while they were receiving it, and those who left and stayed off for at least a year largely did so through work. Oregon has spent much energy diversifying its economy to be more recession-proof. Part of that work should involve the same protection for its labor force.

Appendix**Industrial Sectors coded as 'Seasonal'**

Name	NAICS Code	Peak Quarter	Trough Quarter
Agriculture, Forestry, Fishing and Hunting	11	3	1
Mining, Quarrying, and Oil and Gas Extraction	21	3	1
Utilities	22	2	1
Construction	23	3	1
Manufacturing of Food and Clothing	31	3	1
Retail Trade – Sporting goods, books, music, general, mail order	45	4	1
Educational Services	61	2	3
Arts, Entertainment, and Recreation	71	3	1

Industrial Sector Coding		
NAICS CODE	Figures 2 – 4	All tables
11.00 Agriculture, Forestry, Fishing and Hunting	No change	Not shown
21.00 Mining, Quarrying, and Oil and Gas Extraction	All other	Not shown
23.00 Construction	No change	Construction & Manufacturing
31.00 Manufacturing	Manufacturing	Construction & Manufacturing
32.00 Manufacturing	Manufacturing	Construction & Manufacturing
33.00 Manufacturing	Manufacturing	Construction & Manufacturing
42.00 Wholesale Trade	All other	Trade & Transportation
44.00 Retail Trade	Retail trade	Trade & Transportation
45.00 Retail Trade	Retail trade	Trade & Transportation
48.00 Transportation and Warehousing	All other	Trade & Transportation
49.00 Transportation and Warehousing	All other	Trade & Transportation
51.00 Information	All other	FIRE, Info, Prof/Tech, Mgmt. etc
52.00 Finance and Insurance	All other	FIRE, Info, Prof/Tech, Mgmt. etc
53.00 Real Estate and Rental and Leasing	All other	FIRE, Info, Prof/Tech, Mgmt. etc
54.00 Professional, Scientific, and Technical Services	All other	FIRE, Info, Prof/Tech, Mgmt. etc
55.00 Management of Companies and Enterprises	All other	FIRE, Info, Prof/Tech, Mgmt. etc
56.00 Administrative and Support and Waste Management and Remediation Services	No change	FIRE, Info, Prof/Tech, Mgmt. etc
61.00 Educational Services	No change	Education, health, & social services
62.00 Health Care and Social Assistance	All other	Education, health, & social services
71.00 Arts, Entertainment, and Recreation	All other	Food & Accommodation/Arts, Ent, Rec
72.00 Accommodation and Food Services	No change	Food & Accommodation/Arts, Ent, Rec
81.00 Other Services (except Public Administration)	No change	Not shown
92.00 Public Administration	No change	Not shown
99.00 Blank	All other	Not shown

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