Labor Market Outcomes of the Nicholson Foundation's Prisoner Reentry Program

With the permission of the New Jersey Department of Labor and Workforce Development, the Heldrich Center calculated aggregate labor market outcomes for individuals who participated in prisoner reentry programs funded by the Nicholson Foundation by matching the participants with their records in the New Jersey Unemployment Insurance Wage Record database. This document describes the methodology used to make those calculations and presents the results.

METHODOLOGY

Social Security Number Verification

Because the social security numbers that ex-offenders provide may be invalid, the Heldrich Center took the following actions to ensure that only valid social security numbers were matched against the wage data.

First, the Heldrich Center checked the social security numbers supplied by the Nicholson Foundation against the criteria that the Social Security Administration (SSA) has established for issuing social security numbers. These criteria prohibit certain combinations of numbers, such as social security numbers that begin with 999 or that begin with more than two zeroes. The Heldrich Center removed all social security numbers that violated these rules.

Table One provides an accounting of the number of unique individuals and the number of social security numbers from the files provided by Nicholson.

Table One. Accounting of Records Provided by Nicholson

	Forge	Next Step	Goodwill
Total number of uniue persons	541	98	134
After removing duplicates	539	98	134
Number of SSNs	662	114	134
Total SSNs	910		
After removing dup SSNs	895		
After SSN validation check	850		

Note: All Goodwill records have only have one ssn per person.

The Heldrich Center then securely transferred the remaining 850 valid social security numbers to Security Software Solutions, an SSA-licensed vendor.[1] Security Software

[1] Security Software Solutions receives information about social security numbers from multiple sources. It receives information about if and when a social security number has been assigned as well as if the person has been reported deceased from the Social Security Administration. The name and date of birth information comes from commercial data bases, which draw upon records such as credit files and motor vehicle records. The Social Security Administration is prohibited from releasing name and date of birth information, which is why date of birth is available for only some (55 percent) of the records.

Solutions verified the accuracy of these social security numbers in two ways. First, it identified which social security numbers belonged to individuals who were deceased.

Second, Security Software Solutions matched the social security numbers in the file provided by Heldrich with their database of social security numbers, which contains the first name, last name, and date of birth last associated with each social security number, and created a file it returned to Heldrich. We then compared the file provided by Security Software Solutions with the Nicholson file. The purpose of this comparison was to ascertain to the best of our knowledge whether the social security number provided belonged to the person who provided it.

Based on the information provided by Security Software Solutions, the Heldrich Center removed all social security numbers for individuals who were deceased. Of the remaining social security numbers that belonged to living persons, Heldrich had to decide which records to keep.

To decide which social security numbers to use in the wage analysis, we compared the first names, last names, and dates of birth in the files provided by Nicholson with the same information in the file from Security Software Solutions.

Heldrich used the following rules in deciding which records to include in the wage analysis. If the date of birth associated with a social security number in the Nicholson file matched the date of birth associated with the same SSN in the Security Software Solutions file, Heldrich concluded that the SSN belonged to the Nicholson program participant who provided it. Likewise, if the first name or the last name associated with a social security number in both files matched then Heldrich assumed that the social security number that the Nicholson program participant provided belonged to him or her.

Of course, any records that matched on first name, last name, and date of birth were included, as were records that matched on first name and last name.

Heldrich opted to include all social security numbers from the Nicholson file that exact matched only on date of birth with the record in the Security Software Solutions files because Heldrich thought it was fairly unlikely that someone who made up a social security number would provide a date of birth that happened to match the date of birth actually associated with that social security number.

For many female ex-offenders, Heldrich found that the first names often matched while the last names did not. Were Heldrich to not include first name only matches Heldrich likely would have excluded a number of women who had undergone name changes as a result of marriage or divorce. Heldrich also opted to keep male first name matches for the same reason Heldrich kept the date of birth only matches: the probability of someone giving a social security number and the first name of the person to whom the number

belongs is probably fairly low.[2] For the same reason, Heldrich also included last name only matches.

This meant that all told, Heldrich lost about 30 percent of the people in the Nicholson files (FORGE, Next Step, and Goodwill) because either their social security number was invalid according to SSA rules, their social security number belonged to someone who was deceased, or their social security number belonged to someone who had a different first name, last name, and date of birth.

Table Two provides an accounting of how many individuals were included in the analysis and the reason why they were included.

Table Two. Unique Individuals Included in Analysis after SSN Verification

	Forge	Next Step	Goodwill	Total
First Name, Last Name and Date of Birth All Match	66	11	47	124
First Name and Last Name Match	157	35	39	231
First Name Match	22	5	3	30
Last Name Match	72	9	4	85
Date of Birth Match	38	2	17	57
Total	355	62	110	527

In the final section of the paper we assess the extent to which the application of different exclusion criteria would change the results.

WAGE CALCULATIONS

Normalizing to the Quarter of Initial Program Participation

The individuals who participated in Nicholson-funded reentry programs followed in this study first participated in a program in many different calendar quarters over several years. Because different people had different initial quarters of participation, the calendar quarter that comprised the first full quarter after initial participation was different for different people. So, the first full quarter after initial participation for anyone who began a program in the first quarter of 2005 was the second quarter of 2005, while the first full quarter after initial participation for someone who first participated in the fourth quarter of 2005 was the first quarter of 2006. For each individual, a variable was constructed that indicated whether a person was employed for each quarter relative to the quarter during which they first enrolled in the program. A person was counted as being employed for a particular quarter if they earned wages greater than zero during that quarter.

[2] While probability is low, it is not zero. Someone may, for example, know the date of birth and the social security number of a relative and provide them when arrested.

Each person's individual earnings were calculated in the same fashion, that is, relative to the first quarter of program enrollment.

Initial Quarter of Program Participation

For individuals in the FORGE file, employment and wage outcomes were calculated relative to three different starting points: the quarter the individual first visited the resource center, the quarter the individual's parole began, and the quarter the individual's parole ended.

For individuals in the Next Step data, employment and wage outcomes were calculated relative to the first quarter in which the person enrolled in the program, as measured by an indicator variable for the semesters in which the individual was enrolled.

Inflation Adjustment

All earnings were adjusted for inflation to the third quarter of 2008.

Wage Calculations

Some individuals worked for more than one employer in a particular quarter. Wages from multiple employers were summed for each individual.

Labor Market Outcomes

The Heldrich Center calculated three primary labor market outcomes for the FORGE and Next Step programs: quarterly employment rate; average weekly earnings, and median quarterly earnings.

Employment rates were calculated as the proportion of individuals who participated in a Nicholson-funded program who had wages greater than zero in the quarter of interest. Average weekly earnings and median quarterly earnings were calculated only for individuals who had wages greater than zero for the quarter of interest.

RESULTS AND ASSESSMENT OF THE INCLUSION CRITERIA

Heldrich applied a fairly liberal rule when deciding which records to include in the analysis. Heldrich included anyone who matched only on first name, only on last name, and only on date of birth, as well as individuals who matched on all three and people who matched on first and last name only. It is possible that these inclusion criteria are too liberal and may inadvertently include people who are not the actual individuals who participated in the Nicholson programs. For example, it is possible that someone who matched only on the first name was not the correct person.

To address this possibility, Heldrich ran the outcomes with the possibly more questionable matched excluded.

To assess whether the use of these liberal inclusion criteria altered the results, Heldrich compared the results Heldrich obtained using four different inclusion criteria:

- All first name only, last name only, and date of birth only matches included
- All last name only and date of birth only matches included
- All first name only and date of birth only matches included
- All date of birth only matches included

In each column, all records that matched on first name, last name, and date of birth were included, as were records that matched on both first name and last name but not date of birth.

Heldrich first present the FORGE matches for each of the three different start dates for services (parole beginning date, parole end date, and resource center date. Heldrich have grouped the data by each of the three main outcomes: employment rate, average weekly earnings, and median wage.

The tables basically indicate that if Heldrich were to exclude the questionable matches the results would not be very different in terms of either N-size or labor market outcome.

Table Three. FORGE Quarterly Employment Rates—Parole Begin Date

	All		First Name Only Matches Excluded		Last Name Only Matches Excluded		First Name Only Matches & Last Name Only Matches Excluded	
	N-Size	Average Median Wage	N-Size	Average Median Wage	N-Size	Average Median Wage	N-Size	Average Median Wage
Q1	67	40%	63	41%	53	38%	49	39%
Q2	67	48%	63	48%	53	45%	49	45%
Q3	67	36%	63	33%	53	36%	49	33%
Q4	67	33%	63	32%	53	30%	49	29%
Q5	67	36%	63	33%	53	36%	49	33%
Q6	67	34%	63	33%	53	36%	49	35%
Q7	66	32%	62	31%	52	31%	48	29%
Q8	62	37%	58	36%	49	37%	45	36%

Table Four. FORGE Quarterly Employment Rates—Parole End Date

	All		First Name Only Matches Excluded		Last Name Only Matches Excluded		First Name Only Matches & Last Name Only Matches Excluded	
	N-Size	Average Median Wage	N-Size	Average Median Wage	N-Size	Average Median Wage	N-Size	Average Median Wage
Q1	61	30%	57	28%	47	32%	43	30%
Q2	58	34%	54	33%	45	40%	41	39%
Q3	55	36%	51	35%	42	40%	38	39%
Q4	53	30%	49	29%	40	35%	36	33%
Q5	53	26%	49	24%	40	33%	36	31%
Q6	47	36%	44	34%	36	39%	33	36%
Q7	46	37%	43	37%	35	43%	32	44%
Q8	42	43%	39	41%	31	48%	28	46%

Table Five. FORGE Quarterly Employment Rates—Resource Center Date

	All		First Name Only Matches Excluded		Last Name Only Matches Excluded		First Name Only Matches & Last Name Only Matches Excluded	
	N-Size	Average Median Wage	N-Size	Average Median Wage	N-Size	Average Median Wage	N-Size	Average Median Wage
Q1	302	44%	274	44%	266	44%	250	44%
Q2	203	38%	187	40%	178	42%	163	44%
Q3	194	35%	179	36%	170	38%	155	39%
Q4	171	36%	158	36%	149	38%	134	38%
Q5	145	29%	136	30%	126	29%	111	31%
Q6	123	21%	118	21%	107	24%	92	25%
Q7	97	36%	93	26%	84	27%	69	28%
Q8	78	22%	75	23%	70	24%	59	25%

Table Six. FORGE Average Weekly Earnings—Parole Begin Date

	All		First Name Only Matches Excluded		Last Name Only Matches Excluded		First Name Only Matches & Last Name Only Matches Excluded	
	N-Size	Average Weekly Wage	N-Size	Average Weekly Wage	N-Size	Average Weekly Wage	N-Size	Average Weekly Wage
Q1	27	$355	26	$336	20	$350	19	$346
Q2	32	$366	30	$379	24	$397	22	$407
Q3	24	$366	21	$347	19	$367	16	$360
Q4	22	$354	20	$348	16	$348	14	$339
Q5	24	$352	21	$331	19	$357	16	$342
Q6	23	$334	21	$320	19	$359	17	$336
Q7	21	$339	19	$299	16	$360	14	$325
Q8	23	$314	21	$290	18	$330	16	$308

Table Seven. FORGE Average Weekly Earnings—Parole End Date

	All		First Name Only Matches Excluded		Last Name Only Matches Excluded		First Name Only Matches & Last Name Only Matches Excluded	
	N-Size	Average Weekly Wage	N-Size	Average Weekly Wage	N-Size	Average Weekly Wage	N-Size	Average Weekly Wage
Q1	18	$268	16	$274	15	$286	13	$275
Q2	20	$358	18	$333	18	$353	16	$346
Q3	20	$294	18	$301	17	$303	15	$297
Q4	16	$338	14	$302	14	$336	12	$313
Q5	14	$332	12	$319	13	$359	11	$328
Q6	17	$454	15	$419	14	$458	12	$430
Q7	17	$385	16	$351	15	$383	14	$356
Q8	18	$400	16	$347	15	$380	13	$344

Table Eight. FORGE Average Weekly Earnings—Resource Center Date

	All		First Name Only Matches Excluded		Last Name Only Matches Excluded		First Name Only Matches & Last Name Only Matches Excluded	
	N-Size	Average Weekly Wage	N-Size	Average Weekly Wage	N-Size	Average Weekly Wage	N-Size	Average Weekly Wage
Q1	133	$319	121	$292	117	$297	109	$288
Q2	77	$338	74	$324	74	$323	67	$323
Q3	68	$316	64	$321	64	$324	58	$324
Q4	61	$304	57	$328	56	$325	48	$328
Q5	42	$325	41	$353	37	$347	31	$353
Q6	26	$328	25	$313	26	$310	22	$311
Q7	25	$303	24	$325	23	$326	19	$329
Q8	17	$309	17	$307	17	$307	15	$307

Table Nine. FORGE Median Quarterly Earnings—Parole Begin Date

	All		First Name Only Matches Excluded		Last Name Only Matches Excluded		First Name Only Matches & Last Name Only Matches Excluded	
	N-Size	Average Median Wage	N-Size	Average Median Wage	N-Size	Average Median Wage	N-Size	Average Median Wage
Q1	27	$1,591	26	$1,525	20	$1,445	19	$1,433
Q2	32	$1,632	30	$1,632	24	$1,717	22	$1,717
Q3	24	$2,400	21	$2,367	19	$2,433	16	$2,400
Q4	22	$2,217	20	$2,217	16	$2,217	14	$2,217
Q5	24	$2,191	21	$2,531	19	$2,531	16	$2,561
Q6	23	$2,247	21	$2,247	19	$2,364	17	$2,365
Q7	21	$2,417	19	$2,417	16	$2,555	14	$2,555
Q8	23	$1,725	21	$1,339	18	$2,104	16	$2,070

Table Ten. FORGE Median Quarterly Earnings—Parole End Date

	All		First Name Only Matches Excluded		Last Name Only Matches Excluded		First Name Only Matches & Last Name Only Matches Excluded	
	N-Size	Average Median Wage	N-Size	Average Median Wage	N-Size	Average Median Wage	N-Size	Average Median Wage
Q1	18	$2,298	16	$2,298	15	$2,844	13	$2,844
Q2	20	$1,798	18	$1,472	18	$1,798	16	$1,472
Q3	20	$2,521	18	$2,521	17	$2,560	15	$2,560
Q4	16	$2,216	14	$2,216	14	$2,440	12	$2,440
Q5	14	$3,259	12	$3,259	13	$3,676	11	$3,676
Q6	17	$3,979	15	$3,979	14	$3,589	12	$3,589
Q7	17	$3,132	16	$3,105	15	$3,132	14	$3,105
Q8	18	$2,400	16	$2,400	15	$2,407	13	$2,407

Table Eleven. FORGE Median Quarterly Earnings —Resource Center Date

	All		First Name Only Matches Excluded		Last Name Only Matches Excluded		First Name Only Matches & Last Name Only Matches Excluded	
	N-Size	Average Median Wage	N-Size	Average Median Wage	N-Size	Average Median Wage	N-Size	Average Median Wage
Q1	133	$1,119	121	$1,139	117	$1,184	109	$1,208
Q2	77	$2,347	74	$2,106	74	$2,383	67	$2,347
Q3	68	$2,213	64	$2,099	64	$2,300	58	$2,251
Q4	61	$1,971	57	$1,901	56	$2,026	48	$1,996
Q5	42	$2,263	41	$2,365	37	$2,537	31	$2,584
Q6	26	$1,782	25	$2,417	26	$1,782	22	$2,417
Q7	25	$1,537	24	$1,545	23	$1,471	19	$1,575
Q8	17	$2,687	17	$2,687	17	$2,687	15	$2,687

Table Twelve. Next Step Quarterly Employment Rates

	All		First Name Only Matches Excluded		Last Name Only Matches Excluded		First Name Only Matches & Last Name Only Matches Excluded	
	N-Size	Average Median Wage	N-Size	Average Median Wage	N-Size	Average Median Wage	N-Size	Average Median Wage
Q1	34	29%	33	30%	32	34%	29	38%
Q2	34	32%	33	33%	32	34%	29	34%
Q3	30	40%	29	41%	29	45%	26	46%
Q4	30	33%	29	34%	29	34%	26	38%
Q5	26	27%	26	27%	25	28%	23	30%
Q6	26	27%	26	27%	25	24%	23	26%
Q7	16	31%	16	31%	16	25%	14	29%
Q8	16	31%	16	31%	16	38%	14	36%

Table Thirteen. Next Step Average Weekly Earnings

	All		First Name Only Matches Excluded		Last Name Only Matches Excluded		First Name Only Matches & Last Name Only Matches Excluded	
	N-Size	Average Weekly Wage	N-Size	Average Weekly Wage	N-Size	Average Weekly Wage	N-Size	Average Weekly Wage
Q1	10	$858	10	$817	11	$760	11	$760
Q2	11	$589	11	$600	11	$582	10	$590
Q3	12	$414	12	$409	13	$424	12	$422
Q4	10	$430	10	$420	10	$417	10	$417
Q5	7	$539	7	$539	7	$560	7	$560
Q6	7	$528	7	$502	7	$541	6	$541
Q7	5	$486	5	$467	4	$509	4	$509
Q8	5	$660	5	$677	6	$544	5	$606

Table Fourteen. Next Step Median Quarterly Earnings

	All		First Name Only Matches Excluded		Last Name Only Matches Excluded		First Name Only Matches & Last Name Only Matches Excluded	
	N-Size	Average Median Wage	N-Size	Average Median Wage	N-Size	Average Median Wage	N-Size	Average Median Wage
Q1	10	$590	10	$590	11	$639	11	$639
Q2	11	$1,807	11	$1,807	11	$1,975	10	$2,616
Q3	12	$2,748	12	$2,748	13	$2,663	12	$2,748
Q4	10	$3,224	10	$3,224	10	$3,224	10	$3,224
Q5	7	$4,461	7	$4,461	7	$4,461	7	$4,461
Q6	7	$3,384	7	$3,384	7	$4,574	6	$4,574
Q7	5	$2,792	5	$2,792	4	$4,796	4	$4,796
Q8	5	$4,447	5	$4,447	6	$3,193	5	$4,447

COMPARISON WITH PREVIOUS CALCULATIONS

Finally, purely for illustrative purposes, we compared the FORGE employment rate results obtained in this data run (based on the social security number verification) with the preliminary results Heldrich obtained when we did the analysis without the social security number verification that Security Software Solutions provided.

Resource Center

Quarter after	Employment Rate	N-size	Employment Rate--Low	N-size	Employment Rate--High	N-size
1st Quarter	44%	302	37%	127	46%	147
2nd Quarter	38%	203	34%	119	46%	147
3rd Quarter	35%	194	29%	119	43%	147
4th Quarter	36%	171	28%	123	40%	147
5th Quarter	29%	145	25%	121	38%	147
6th Quarter	21%	123	19%	122	33%	147
7th Quarter	26%	97	24%	95	38%	116
8th Quarter	22%	78	23%	79	35%	84

Parole Begin

Quarter after	Employment Rate	N-size	Employment Rate--Low	N-size	Employment Rate--High	N-size
1st Quarter	40%	67	36%	87	38%	90
2nd Quarter	48%	67	39%	85	42%	90
3rd Quarter	36%	67	29%	85	33%	90
4th Quarter	33%	67	27%	84	32%	90
5th Quarter	36%	67	28%	83	33%	90
6th Quarter	34%	67	29%	85	33%	90
7th Quarter	32%	66	27%	83	31%	89
8th Quarter	37%	62	32%	79	36%	85

Parole End

Quarter after	Employment Rate	N-size	Employment Rate--Low	N-size	Employment Rate--High	N-size
1st Quarter	30%	61	25%	79	27%	81
2nd Quarter	34%	58	29%	75	32%	78
3rd Quarter	36%	55	32%	72	35%	75
4th Quarter	30%	53	30%	71	32%	73
5th Quarter	26%	53	26%	72	27%	73
6th Quarter	36%	47	30%	64	33%	67
7th Quarter	37%	46	31%	62	34%	65
8th Quarter	43%	42	33%	55	37%	59

There are some noticeable differences in terms of N-size and some fairly large differences in employment rates. We think the differences in results are significant enough to justify continuing to use Security Software Solutions social security number verification service.