

Employment Experiences of Ex-Offenders Following Release from Ohio State Prisons during 1999 and 2000

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Aims of the study

- Describe post-prison employment experiences of offenders released from Ohio prisons during 1999-2000.
- Assess the extent to which variation in local labor market conditions affect the timing and persistence of post-prison unemployment.
- Develop estimates of the effects of prison that isolate its effects from those of other factors that contribute to labor market outcomes (e.g., low education levels or poor work histories).
- Estimate the effects of prison programs and policy, using propensity score methods to assess the effects of prison programs on post-prison employment outcomes.

Research questions related to post-prison employment

- What is the impact of variation across places and over time in local labor market conditions (i.e., county-level unemployment) on post-prison employment?
- What individual-level factors affected post-prison employment?
- Does participation in prison programs affect employment outcomes?

Overview of findings

- Local labor market condition matter: County unemployment rates are negatively associated with the time to find a job upon release from prison.
- Pre-prison employment experiences have the largest associations with post-prison employment, after controlling for a range of individual-level attributes.
- Post-prison employment experiences of ex-offenders are comparatively poor: More than one-third of released offenders had not found a job by the end of the 8th quarter following release from prison
- Completion of vocational training (obtaining a certificate) may retard the erosion of human capital that can occur in prison, as while obtaining a certificate did not increase the probability of finding a job, offenders with pre-prison employment who obtained a certificate had higher probabilities of finding a job.

Background

- Ex-offenders are marginally connected to labor markets:
 - One-third of prisoners in BJS inmate survey had no employment prior to incarceration; 55% reported full-time employment prior to incarceration
 - Offenders have low levels of formal education: 41% of state inmates had not completed high school or its equivalent (compared with 18% of the general population)
- Prison programs are viewed as providing opportunities to improve post-prison integration into mainstream society.
- Ex-prisoners face barriers to employment:
 - Pager's experiment finds that a criminal record is associated with a 50% reduction in employment opportunities for whites and 64% reduction for blacks.
 - Holzer finds (from employer surveys) that employers' view ex-prisoners as relatively unattractive employment prospects and prefer welfare participants over prisoners.

Explanations for post-release effects on employment and earnings

- Stigma hypothesis: Involvement with the criminal justice system labels individuals as “essentially deviant;” consequently employers may use the existence of a criminal record to exclude an individual from consideration for a job without taking into account the applicant’s other attributes.
 - Social stigma: Employer surveys reveal that between 30% and 40% checked the criminal history records of their most recent hires; about 65% reported that they would not knowingly hire an ex-offender, regardless of the offense; employers prefer to hire other marginalized workers such as welfare recipients over ex-cons.
 - Legal stigma: Some state and federal legislation bars ex-felons from certain classes of employment; voting rights may be suspended, at least temporarily.
- Social capital hypothesis: Prior contact with the criminal justice system leads to social or criminal embeddedness that deprives young persons of the necessary social or human capital to participate in the labor market. Past criminality more than the stigma of a current record causes unemployment.

Explanations for post-release effects on employment and earnings

- Social capital (cont.): Time in prison leads to the development of criminal networks that weaken ties to legitimate employment and job referral networks. Incarceration therefore weakens connections to mainstream social institutions and therefore disadvantages ex-offenders above what would be expected by employer discrimination. (Prior criminal record.)
- Crime as a time-allocation decision: Individuals find criminal activity to be more profitable than legal labor market activity. Allocating time to illegal activities diminishes time spent in legal labor market participation, thereby diminishing performance in legal markets. Time in prison further erodes human capital; prolonged periods of incarceration can disrupt career building trajectories and relegate ex-offenders to low-level positions that offer little in the way of advancement. (Time served in prison.)

Approach, data and methods

- Approach:
 - Use administrative data from several sources and links (merge-matches) individual-level data from these sources to provide longitudinal data on pre- and post-prison employment experiences.
 - Use statistical methods to control for selectivity issues (e.g., participation in programs) and attempt to isolate effects of programs.
- Data:
 - Ohio Department of Rehabilitation and Corrections (ODRC) data on about 46,000 offenders released from prison during 1999 and 2000, including:
 - Prison administrative data (e.g., offense, criminal history, time served, supervision, etc.);
 - Prison program participation records;
 - Prison education data, including GED in prison, TABE scores, and pre-prison education levels.
 - Vocational training program completion data and job interview data.

Approach, data and methods

- Data:
 - Ohio Department of Jobs and Family Services (ODJFS) data on unemployment insurance (UI) wage data.
 - UI data cover over 95% of employers in Ohio;
 - Quarterly data from 1994 to 2002 on number of employers, total earnings per job, SIC code of industry employed.
 - Linked ODRC/ODJFS data:
 - Over 85% match rate, comparable to other studies (e.g., Washington State);
 - 8 quarters of pre-prison employment for over 70% of releases (admitted after 1996);
 - Up to 14 quarters of post-prison employment data for 85% of releases.
 - Limitations of the linked data:
 - UI wage data does not contain hours worked or occupation codes; hence, earnings equations are based on total compensation and industry classifications only.
 - Prison program data are limited to indicator variables (did a person participate in/complete a program); no measures of degree of participation available.

Approach, data and methods

- Data:
 - Strengths of UI wage data:
 - Information about the number of jobs, sectors employed, and earnings per quarter.
 - Result in comparable findings with survey data when used to evaluate employment programs (Kornfeld and Bloom 1999)
 - In Ohio, 99% of jobs are covered by UI wage data
 - Analysis of participation in formal labor markets provides a measure of integration into mainstream society.
 - County of sentencing used to identify county of release and used as the link to local labor market conditions
 - Cleveland area subsample showed that 90% of released offenders were sentenced in their county of release. (Special analysis of releases provided by Steve Van Dine.)

Approach, data and methods

- ODRC data contains measures of individual attributes:
 - Offense: Categorized into relatively homogenous groups,
 - Severity level: Felony level,
 - Criminal history: (1) count of number of prior admissions and (2) binary variable indicating release from a first term—new court commitment—as opposed to a commitment as a conditional release violator.
 - Method of release and form of post-prison supervision: SB2, or truth in sentencing; supervised under PRC; old law releases; judicial releases,
 - Length of stay in prison,
 - Education measures: TABE scores; completion of GED in prison
 - Demographic attributes: Age, race, gender
 - Participation in substance abuse, education, vocational training programs.
 - Obtaining a vocational training certification upon completion of vocational program.

Approach, data and methods

- Data:
 - Strengths:
 - Relatively inexpensive way to develop longitudinal data on employment experiences; updates are even less expensive than obtaining historical records. (Much less costly than gathering survey data.)
 - Merge-match methodology can be applied to other data sources, e.g., child support enforcement data, arrest histories, etc.
- Methods:
 - Event history analysis (discrete hazard model) of duration of post-prison unemployment (conditional probability of exiting unemployment on duration of time unemployed);
 - Individual fixed effects regressions of employment;
 - Propensity score methods to isolate program effects.

What were the characteristics of the released offenders?

- All releases:
 - Offenses:
 - 30% were violent offenders
 - 32% were property offenders
 - 27% were drug offenders
 - Gender:
 - 93% were male
 - Supervision:
 - About two-thirds (65%) were released under some form of supervision (parole, PRC, judicial)
 - Two-thirds of male offenders were released under supervision:
 - 43% were violent offenders
 - 30% were property offenders
 - 17% were drug offenders

Offenders released from Ohio state prisons during 1999 and 2000.

Offense category	All releases		Males		Females	
	Number	Percent	Number	Percent	Number	Percent
Violent	13,487	30.4%	12,692	30.8%	795	24.4%
Murder	653	1.5%	558	1.4%	95	2.9%
Rape	1,395	3.1%	1,381	3.4%	14	0.4%
Robbery	4,959	11.2%	4,664	11.3%	295	9.1%
Aggravated assault	5,431	12.2%	5,178	12.6%	253	7.8%
Other violent	203	0.5%	126	0.3%	77	2.4%
Simple assault	846	1.9%	785	1.9%	61	1.9%
Property	14,014	31.6%	12,819	31.2%	1,195	36.7%
Burglary	6,397	14.4%	6,185	15.0%	212	6.5%
Arson	328	0.7%	283	0.7%	45	1.4%
Theft	3,491	7.9%	2,964	7.2%	527	16.2%
Other property	3,798	8.6%	3,387	8.2%	411	12.6%
Drugs	12,195	27.5%	11,109	27.0%	1,086	33.3%
Drug trafficking	4,470	10.1%	4,129	10.0%	341	10.5%
Drug abuse/possession	7,292	16.4%	6,628	16.1%	664	20.4%
Drug, other	433	1.0%	352	0.9%	81	2.5%
Weapons	1,163	2.6%	1,124	2.7%	39	1.2%
Public order	3,361	7.6%	3,239	7.9%	122	3.7%
Other	178	0.4%	156	0.4%	22	0.7%
Unknown	6	0.0%	6	0.0%	0	0.0%
Total	44,404	100.0%	41,145	100.0%	3,259	100.0%

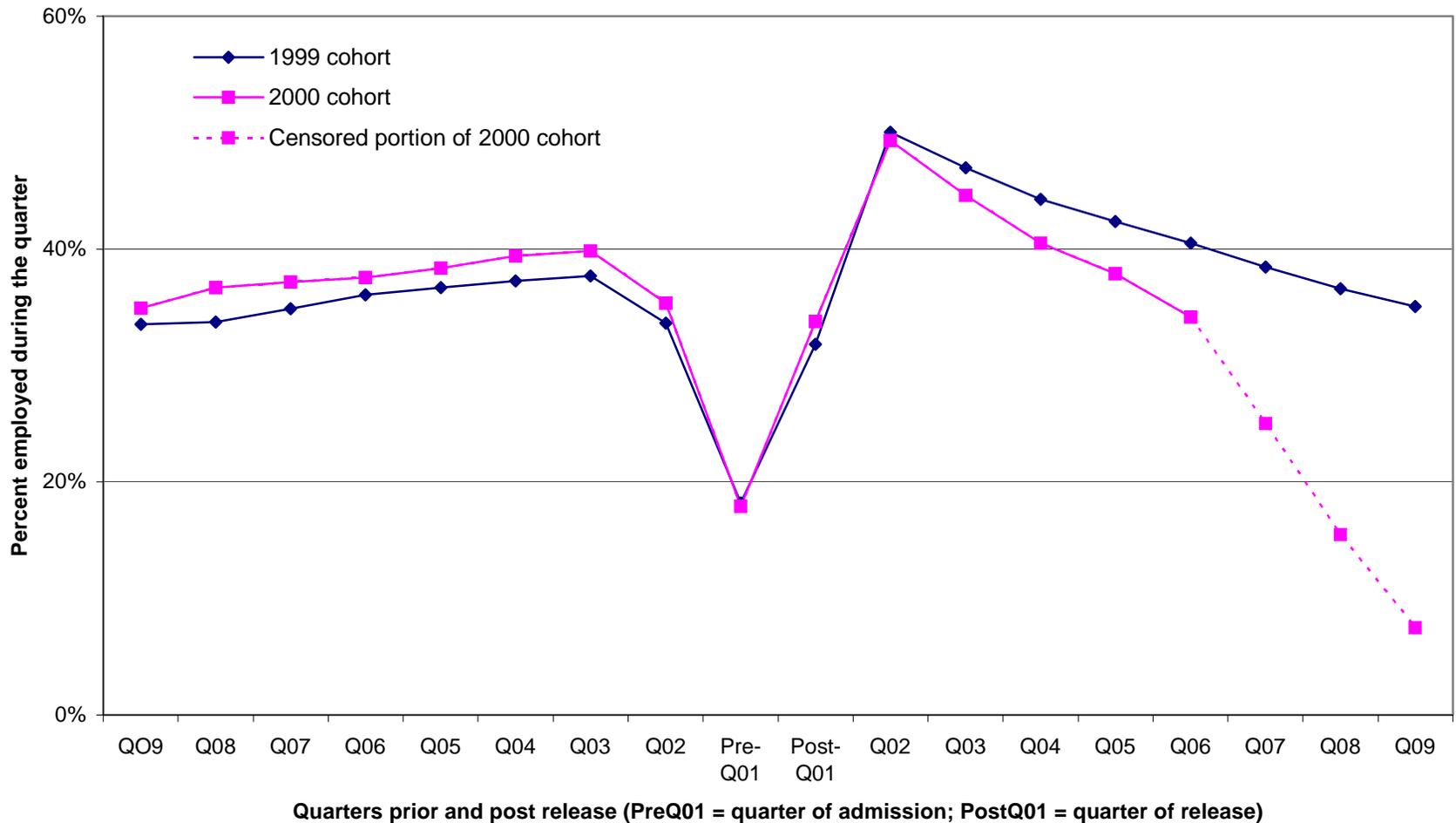
Source: Authors' analysis of Ohio Department of Correction and Rehabilitation data.

Male offenders released from Ohio state prisons during 1999 and 2000.

Offense category	Males					
	All releases		Supervised		No supervision	
	Number	Percent	Number	Percent	Number	Percent
Violent	12,692	30.8%	11,736	43.4%	956	6.8%
Murder	558	1.4%	519	1.9%	39	0.3%
Rape	1,381	3.4%	1,044	3.9%	337	2.4%
Robbery	4,664	11.3%	4,515	16.7%	149	1.1%
Aggravated assault	5,178	12.6%	4,805	17.8%	373	2.6%
Other violent	126	0.3%	111	0.4%	15	0.1%
Simple assault	785	1.9%	742	2.7%	43	0.3%
Property	12,819	31.2%	8,060	29.8%	4,759	33.7%
Burglary	6,185	15.0%	5,101	18.9%	1,084	7.7%
Arson	283	0.7%	262	1.0%	21	0.1%
Theft	2,964	7.2%	1,328	4.9%	1,636	11.6%
Other property	3,387	8.2%	1,369	5.1%	2,018	14.3%
Drugs	11,109	27.0%	4,514	16.7%	6,595	46.7%
Drug trafficking	4,129	10.0%	2,156	8.0%	1,973	14.0%
Drug abuse/possession	6,628	16.1%	2,214	8.2%	4,414	31.3%
Drug, other	352	0.9%	144	0.5%	208	1.5%
Weapons	1,124	2.7%	501	1.9%	623	4.4%
Public order	3,239	7.9%	2,082	7.7%	1,157	8.2%
Other	156	0.4%	125	0.5%	31	0.2%
Unknown	6	0.0%	4	0.0%	2	0.0%
Total	41,145	100.0%	27,022	100.0%	14,123	100.0%

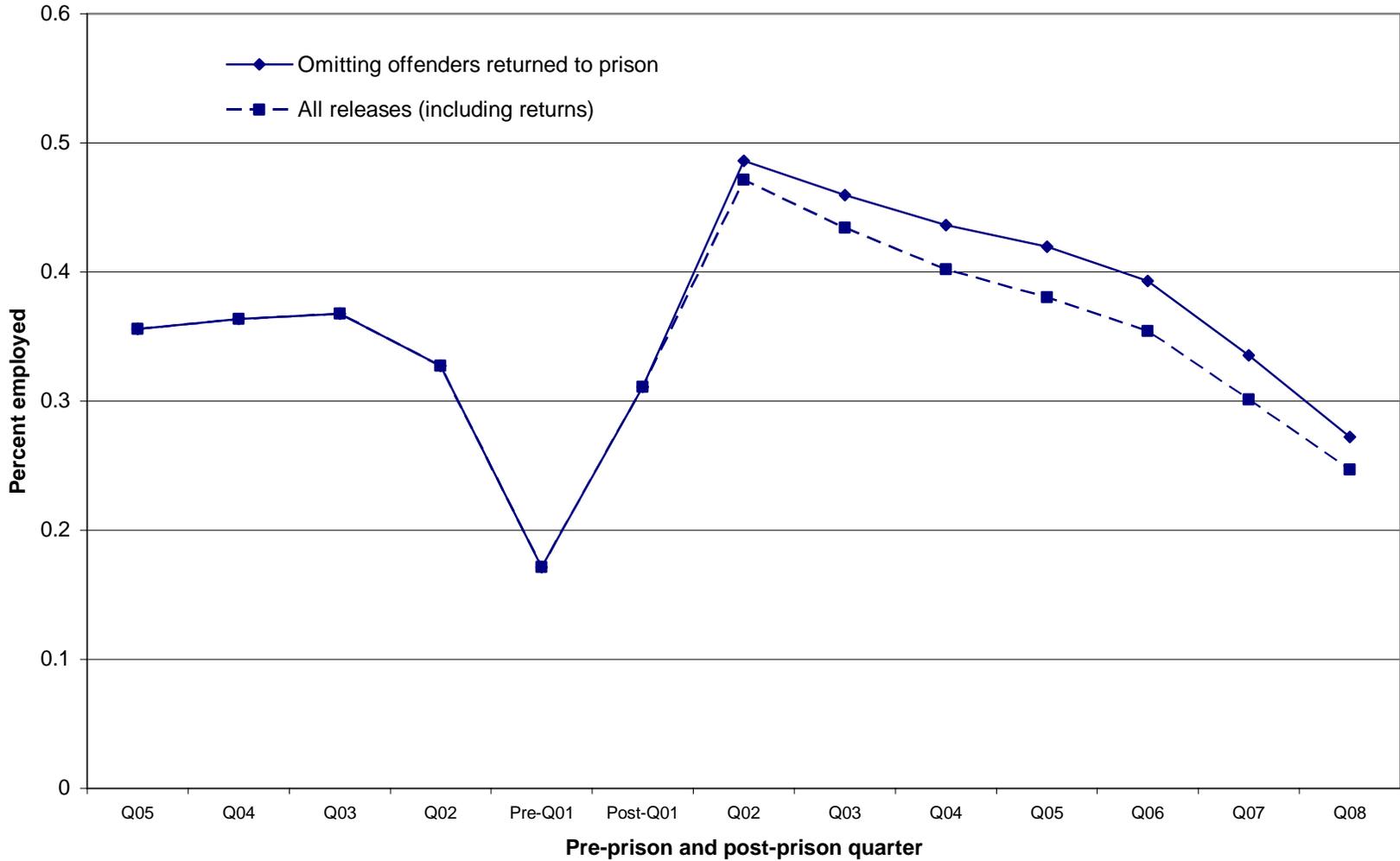
Source: Authors' analysis of Ohio Department of Correction and Rehabilitation data.

Pre- and post-prison employment, in the 8 quarters prior and post release plus the quarter of admission and quarter of release: Offenders released from Ohio state prisons during 1999 and 2000

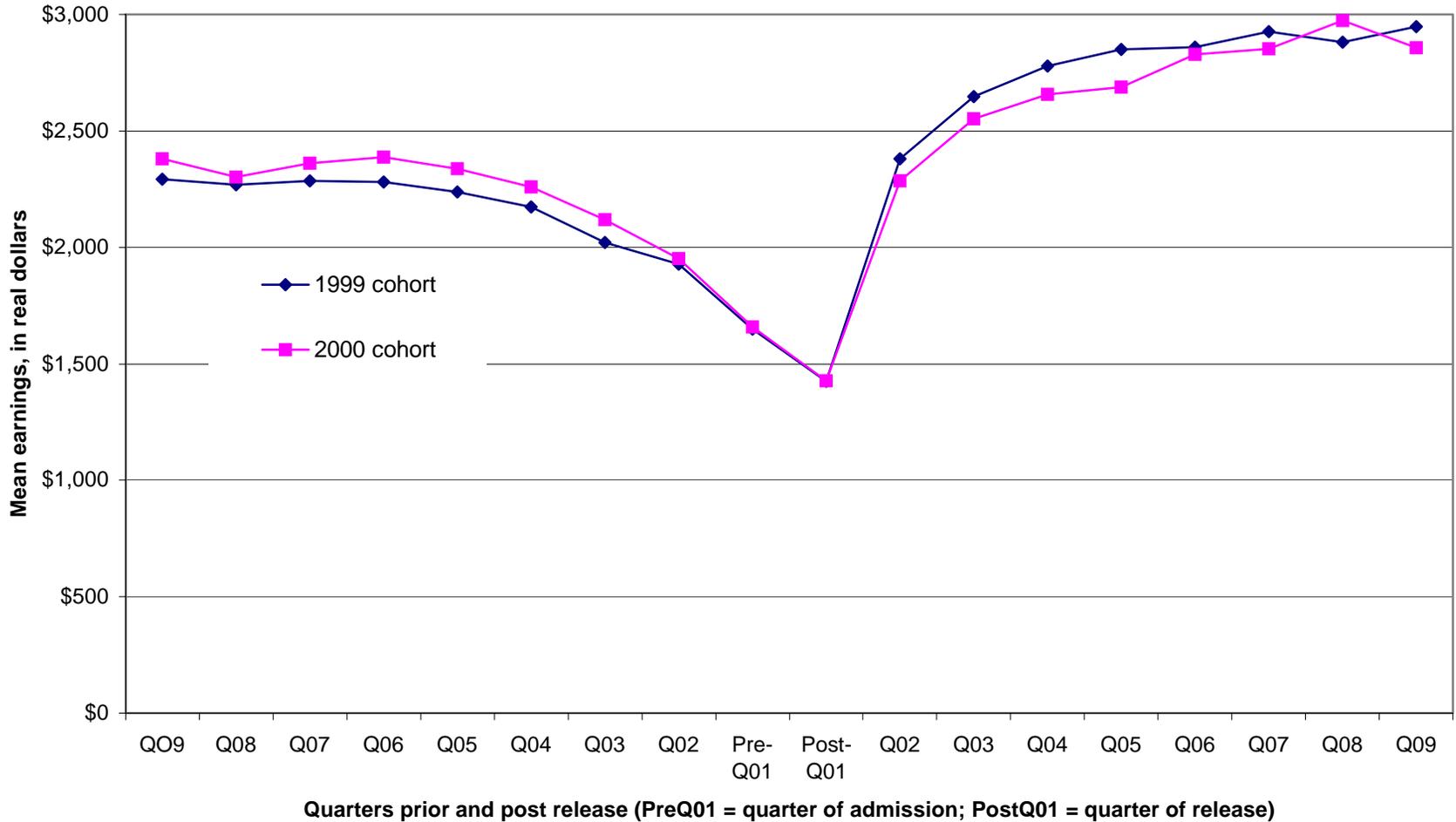


Source: Author's analysis of Ohio Department of Rehabilitation and Corrections and Ohio Department of Jobs and Family Services data.

Figure 2. Percent of offenders released during 1999 and 2000 who were employed during any quarter, by pre- and post-prison quarters



Mean earnings per quarter for released offenders with some employment in the 8 quarters prior to and quarter of admission into prison and some employment in the quarter of and first 8 quarters following release, by release cohort



Source: Author's analysis of Ohio Department of Rehabilitation and Corrections and Ohio Department of Jobs and Family Services data.

Figure 1. Hazard rate, or probability of exiting the initial spell of unemployment (finding a job) upon release from prison, conditional upon the length of unemployment

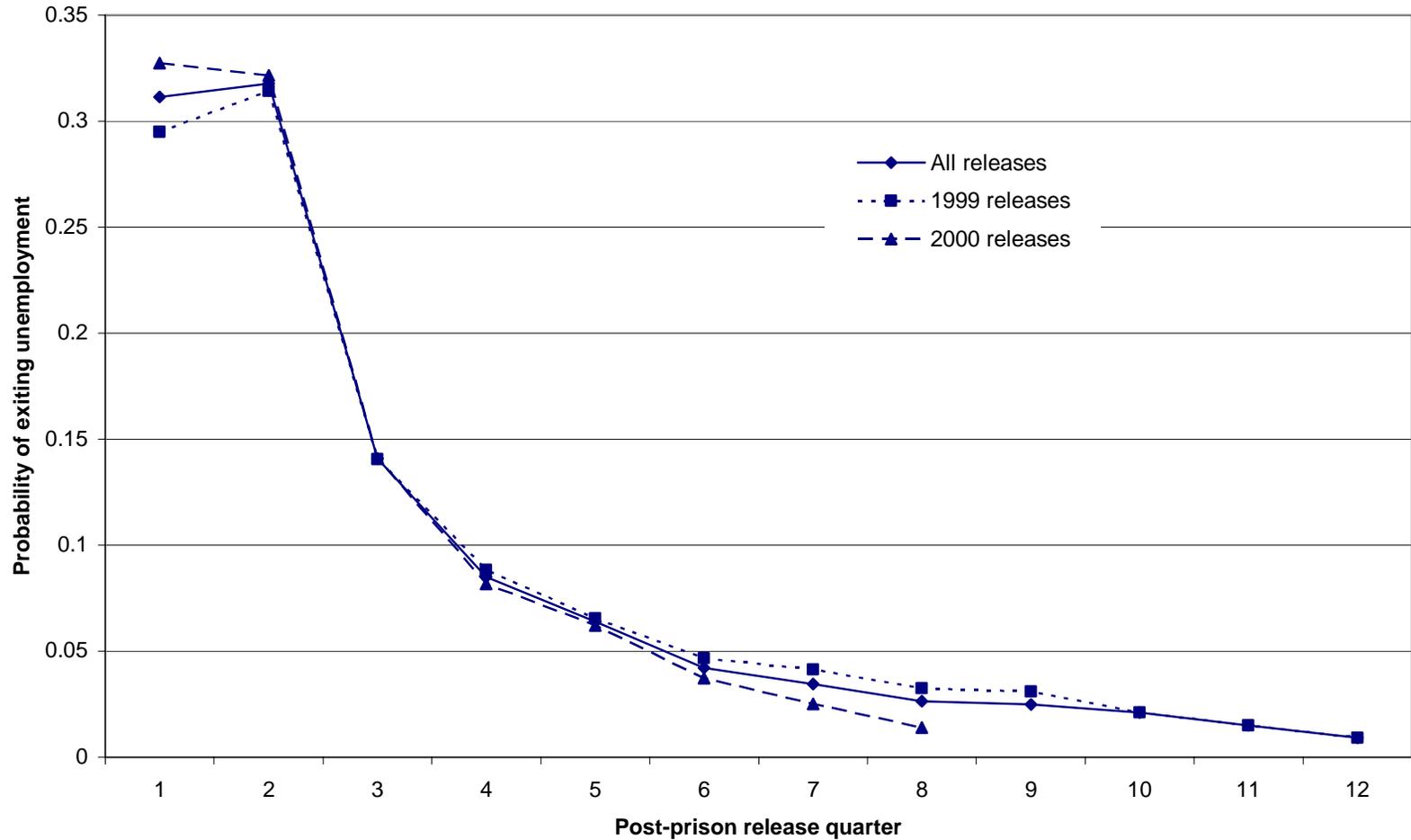
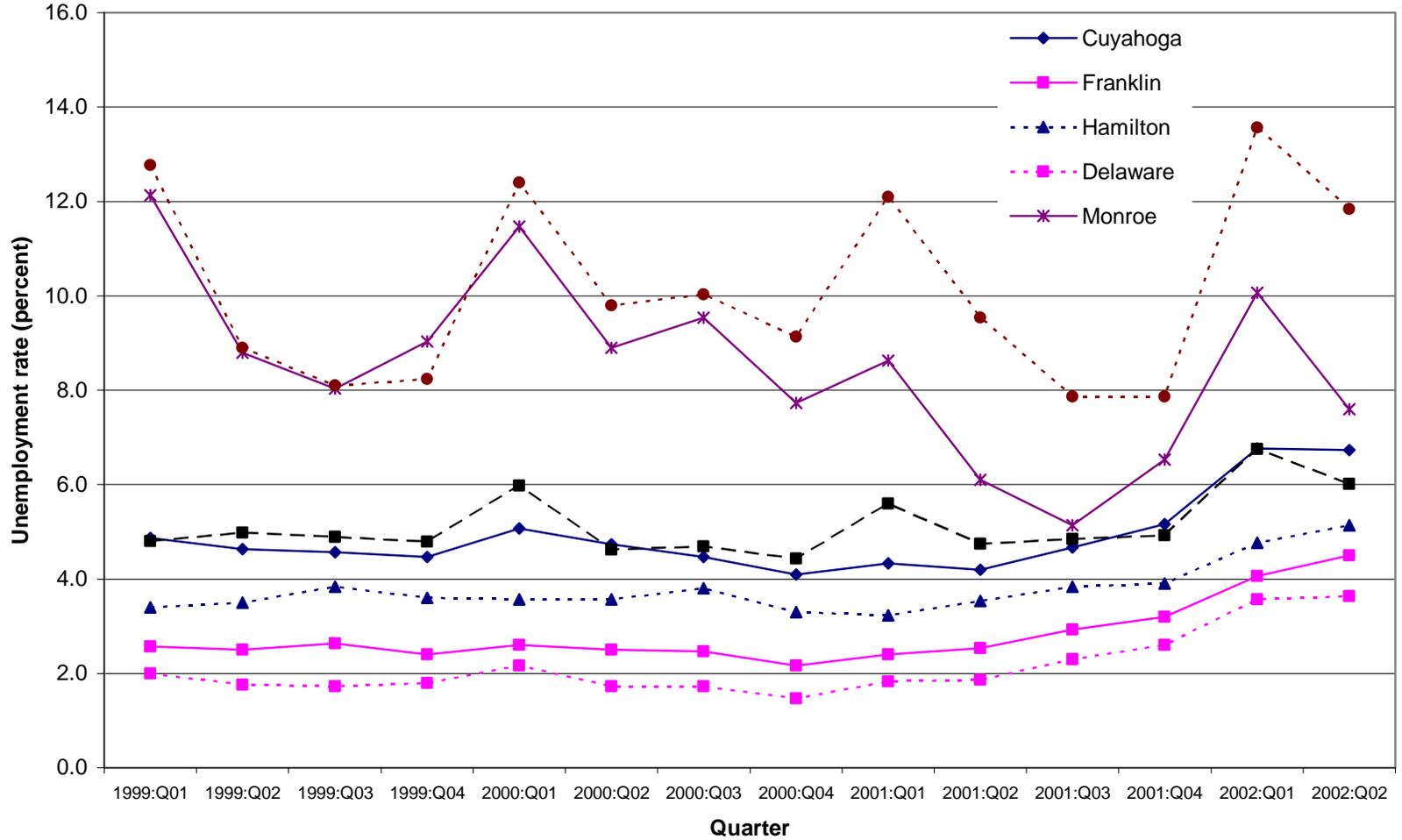


Figure 3. Quarterly unemployment rates for selected Ohio counties --
1999:Q1 through 2002:Q2



Post-prison employment and earnings experiences of released offenders

- Employment (see figure)
 - Pre-prison employment reached 40% in the 2 quarters prior to admission.
 - Post-prison employment peaked at about 50% in the 2nd quarter after release, but by the 6th quarter, post-prison employment rates dropped to about 40%.
 - For the 1999 cohort, by the 9th quarter post-release, employment was at its pre-prison level of below 40%. (Ignore the last 4 quarters of data for the 2000 release cohort, as these data are censored.)
- Earnings for offenders with positive earnings only in real (2000 dollars) (see figure)
 - Pre-prison earnings peaked around the 4th or 5th quarter prior to admission; average pre-prison earnings was about \$2,200 per quarter, or \$8,800 per year. (Recall that the pre-prison earnings data reflects different entry years back to 1994.)
 - Post-prison earnings for those who were employed increased to a peak of just under \$3,000 per quarter by the 8th and 9th quarter post-release. However, keep in mind that the 9th quarter earnings level are only for the offenders who still had jobs by the 9th quarter. Between Q2 and Q9 post-release, about 15% of employed ex-offenders lost their jobs.
 - Estimated annual earnings of those employed in Q9 post prison was \$12,000.

Supervised offenders: Returns to prison for technical violations or new crimes

- Survival curves – give the percentage of the release cohort “surviving” (that is, not returning to prison) for each month.
 - Property offenders had the lowest survival rate: By month 34 (about 3 years out), about 66% of supervised property offenders were still on the street.
 - Drug offenders had the highest survival rates: By month 34, about 76% of supervised drug offenders were still on the street.
 - Violent and public-order offenders were in-between these two extremes, but public-order offenders had survival rates comparable to those of property offenders (i.e., lower survival probabilities than either violent or drug offenders).
- Hazard rates – give the rate of return to prison per month for the offenders “at risk” of returning, where “at risk” refers to those who have not yet returned. A hazard rate would be interpreted as: The hazard or “rate of return per month.”
 - Hazards can increase or decrease, as the hazards for each of the four offense groups do in the attached figure.
 - The hazards for type of release indicate that by month 6, offenders released judicially had higher hazards of return than those released under parole or PRC.

Figure __. Survivor curves, offenders returning to Ohio state prisons: Offenders released during 1999 and 2000 under some form of supervision, by major offense category

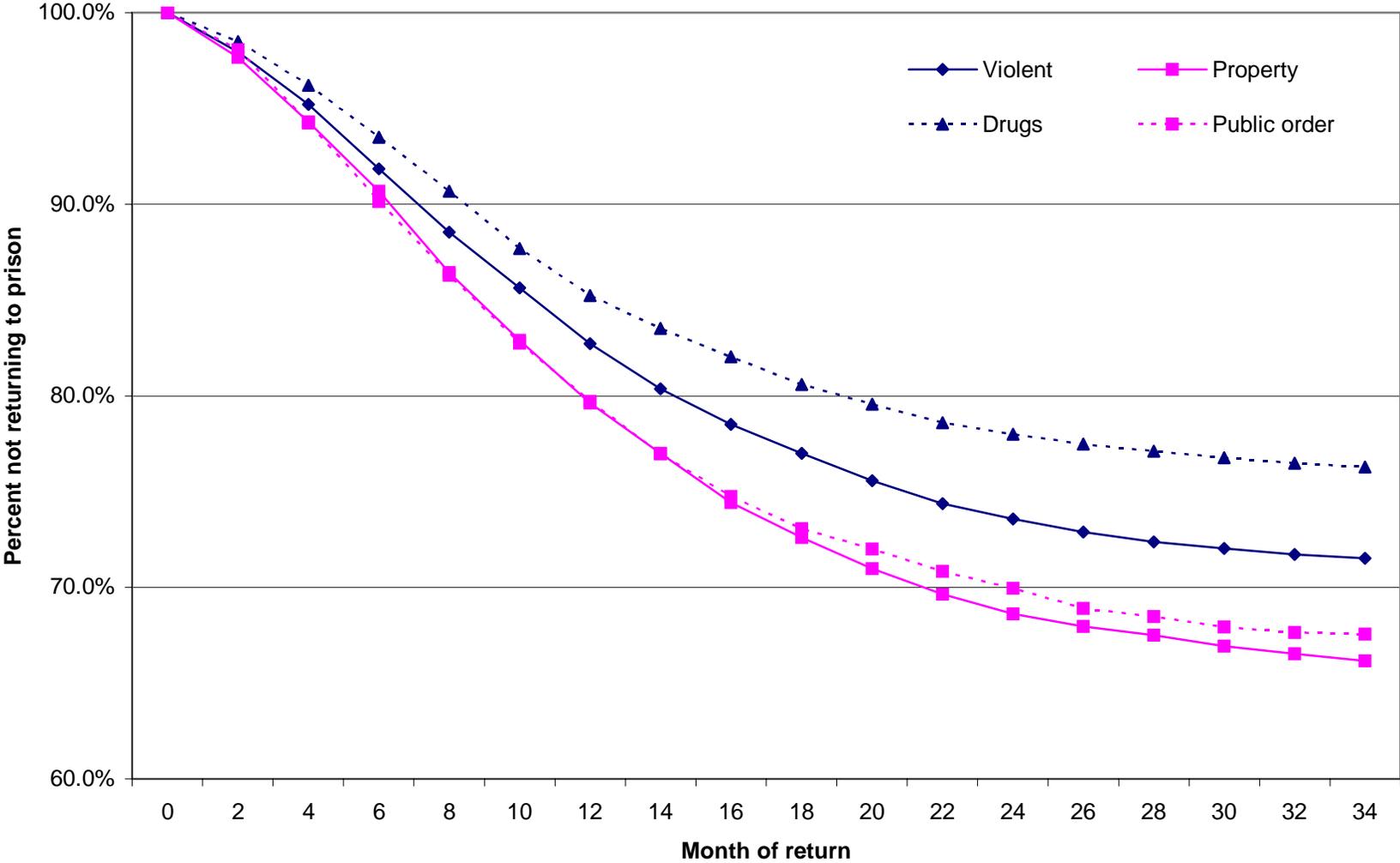


Figure __. Hazard rates per month for offenders returning to Ohio state prisons: Offenders released during 1999 and 2000 under some form of supervision, by major offense category

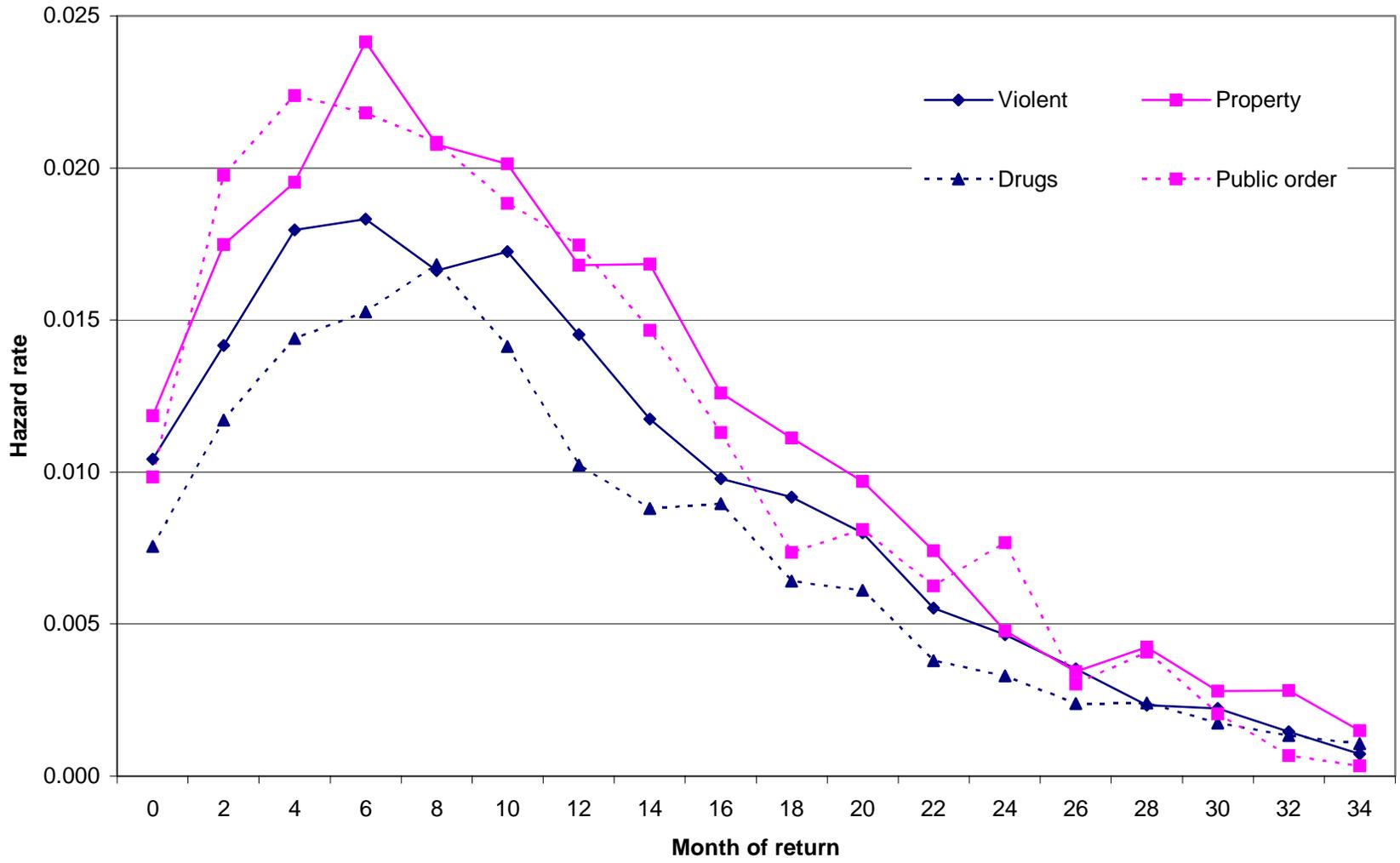


Figure __. Hazard rates, offenders returning to Ohio state prisons: Offenders released during 1999 and 2000, type of supervision

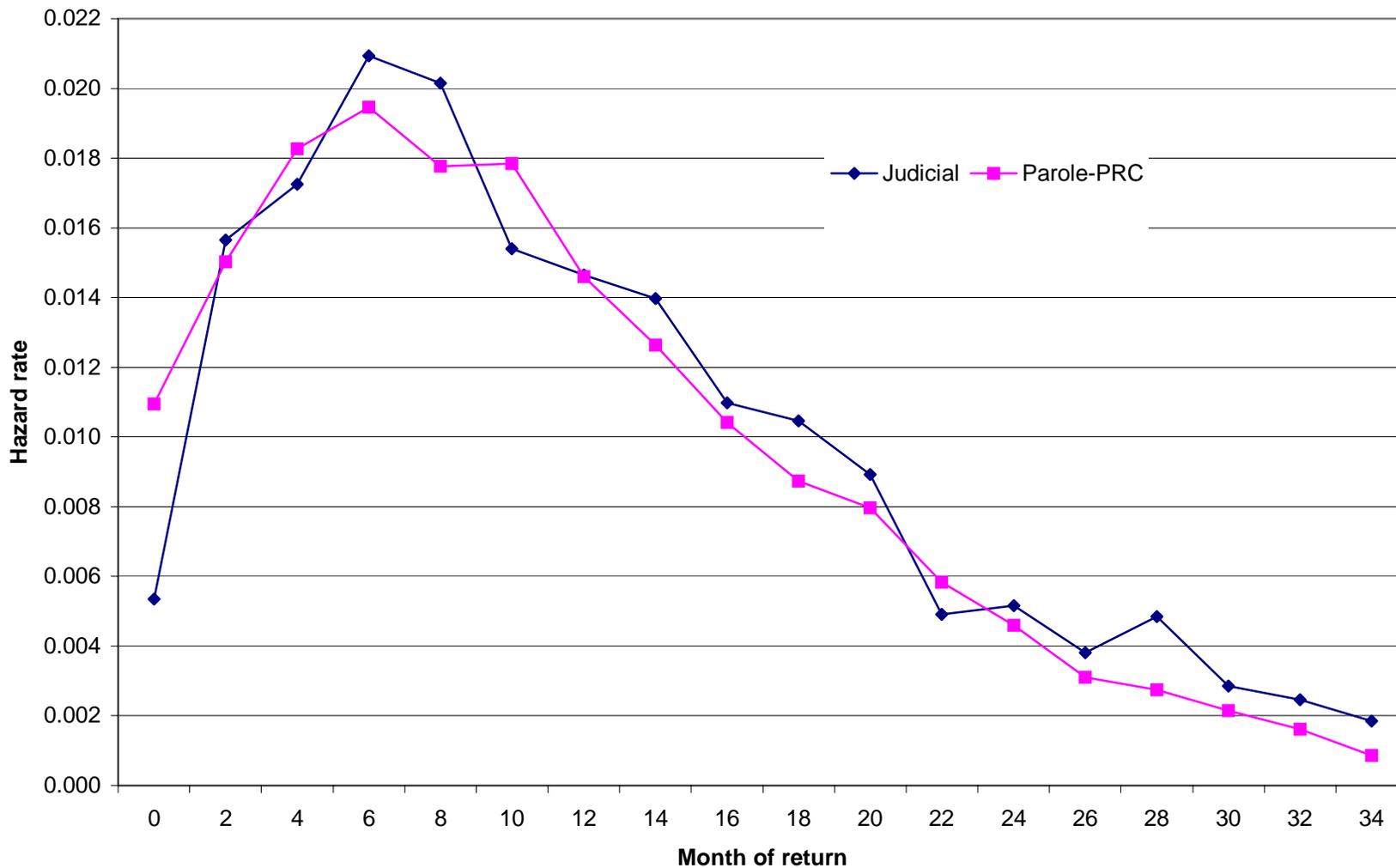


Table 3. Parameter estimates for labor market variables: Dependent variable = conditional probability of exiting unemployment (getting a job) upon release from prison.

Labor market variables	County unemployment rate at release			Quarterly (time varying) county unemployment rate				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
County unemployment rate	-0.0310 *** (0.00608) [-0.4%]	-0.00658 (0.00634) [-0.1%]	-0.00662 (0.00634) [-0.1%]	-0.0571 *** (0.00633) [-0.8%]	-0.0369 *** (0.0066) [-0.5%]	-0.037 *** (0.00661) [-0.5%]	-0.1363 *** (0.0152) [-1.8%]	-0.1340 *** (0.0152) [1.8%]
N of quarters with pre-prison employment		0.4156 *** (0.00517) [6%]			0.4148 *** (0.00517) [6%]		0.4140 *** (0.0052) [6%]	0.4277 *** (0.0081) [6%]
N quarters pre-prison by time interaction								-0.0060 * (0.0027) [0.01%]
Employed pre-Q1			0.3859 *** (0.0244) [5%]			0.388 *** (0.0244) [5%]		
Employed pre-Q2			0.4553 *** (0.0214) [6%]			0.4543 *** (0.0214) [6%]		
Employed pre-Q3			0.4476 *** (0.0214) [6%]			0.4463 *** (0.0214) [6%]		
Employed pre-Q4			0.3357 *** (0.0218) [4%]			0.3336 *** (0.0218) [4%]		
Number of observations	144,316	144,316	144,316	144,316	144,316	144,316	144,316	144,316
Log likelihood	-52955	-49623	-49614	-52927	-49607	-49598	-49502	-49465
Degrees of freedom	46	47	51	46	47	51	134	135
Duration dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County fixed effects							Yes	Yes

Notes: Estimates are based on a logistic regression model in which the dependent variable equals 1 for exiting the initial spell of post-prison unemployment. Each specification also includes individual level offender variables and duration dummy variables. Standard errors are in parentheses. Asterisks indicate that the coefficient is statistically significantly different from zero at the 10% (*), 5% (**), and 1% (***) levels.

Bracketed values are marginal effects of variables, evaluated at their mean levels. Unemployment rates are measured as percentages.

Results

- Marginal effects of labor market conditions on the probability of exiting unemployment:
 - County unemployment rate fixed at time of release:
 - County unemployment only: 0.4% to 0.8%age points around a mean of 16%
 - Fixed, plus pre-prison employment: not significant
 - County unemployment rate, time varying:
 - County unemployment only: 0.8% to 1.2%age points
 - County unemployment plus pre-prison employment: 0.8%age points
 - County unemployment plus pre-prison employment plus county effect: 2%age points
 - Pre-prison employment: each additional quarter of pre-prison employment increases the baseline probability of post-prison employment by 6 percentage points

Figure 4a. Simulated survivor functions: Percent who did not find a job, by quarter and county unemployment rate

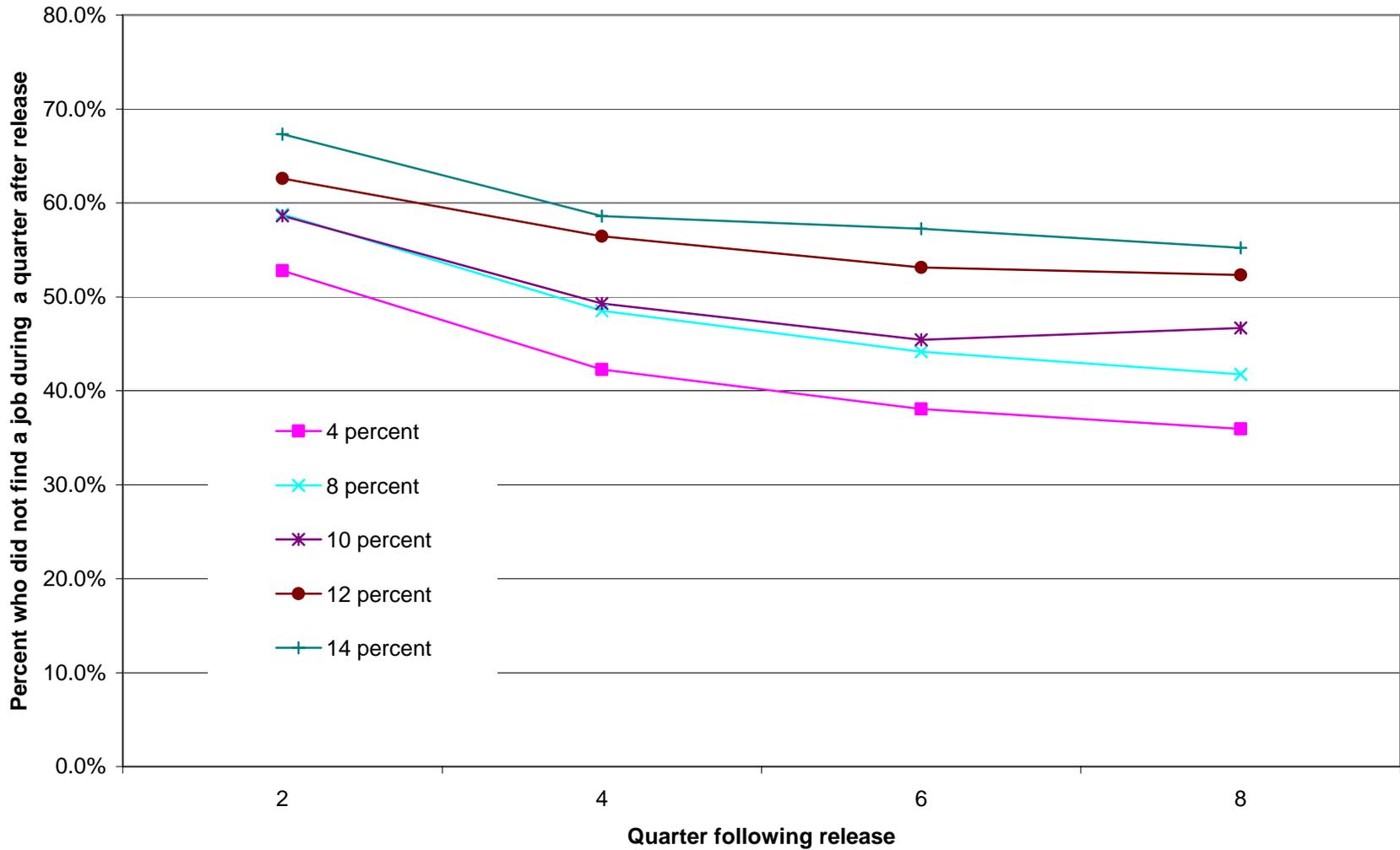
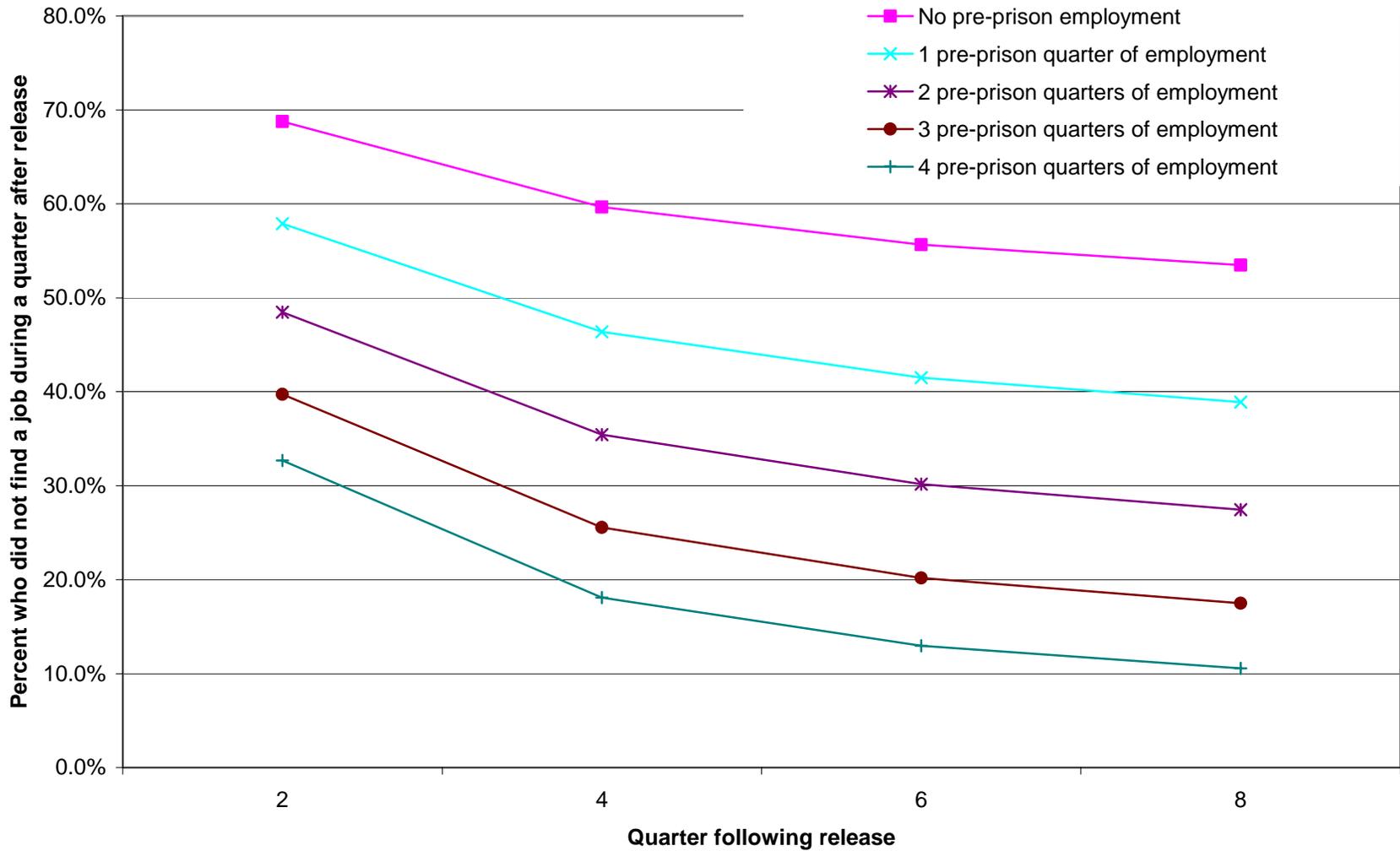


Figure 4b. Simulated survivor functions: Percent who did not find a job, by quarter and pre-prison employment quarters



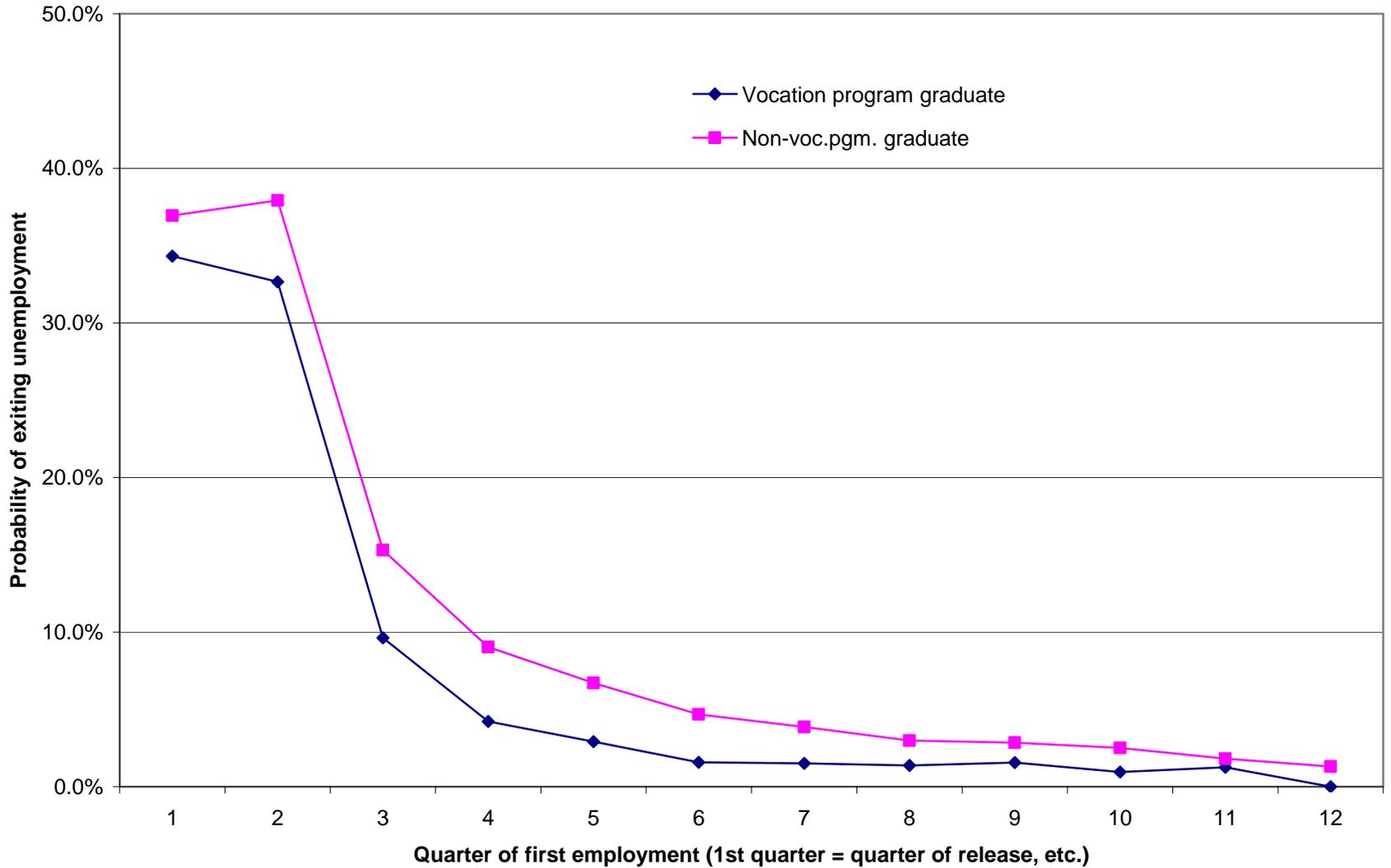
Other variables in the model

- Other variables are not affected by method of measuring county unemployment (as fixed or time-varying)
- Form of supervision:
 - Parolees: Increase employment probability by 5 to 6 percent
 - Judicial or PRC release: Increase employment by 2 to 3 percent
- Criminal history
 - Prior incarcerations: Employment probability increases with number of priors
 - New court commitment: Lower probability of employment
 - Counterintuitive findings, but first-term group may include PRC releases as compared to parole release (see TIS sentences)
- TIS sentence: Lowers probability of employment
- Time served increases probability of employment
 - May be correlated with old-law/new-law split and parole
- Race: Blacks more likely to find employment than whites
- Age: Younger offenders less likely than older offenders to find employment

Other variables in the model

- Offense severity:
 - Less severe felony level lowers probability of exiting unemployment (again, may be correlated with old law/new law and parole)
- Offense type:
 - Rape: Lowest probability of employment
 - Burglary/Robbery: Highest probability of employment
 - Offense type correlated with supervision status, as drug offenders are less likely to be supervised than others
- Prison program participation
 - Participation in vocation work assignments, substance abuse programs, GED in prison: No effect on post-prison employment
 - TABE scores: Higher TABE scores associated with higher probability of employment (marginal effect = 0.1%)
 - Obtaining vocation training certificate: lowers employment probabilities (marginal effect = -1.5%)

Figure __. Hazard rate: Probability of exiting unemployment upon release from prison, given duration of unemployment



Matching offenders to estimate effects of obtaining vocation certificate

- Comparing completers with other offenders does not take into account selectivity into program
- Matching offenders using propensity scores:
 - Propensity to complete (obtain) certificate as a function of individual attributes, including TABE score, demographics, offense severity and offense type, sentence length, prior incarcerations, pre-prison employment
 - Score equal to the predicted probability of completing
 - Offenders classified into 5 groups based on the quintiles of the predicted probabilities of obtaining the certificate
 - Within groups, offenders have roughly comparable probabilities of obtaining the certificate and those who actually obtained the certificate can be compared to those who did not obtain it.
 - Attributes within groups balanced
- Comparing post-prison employment with groups
- Regression (discrete time logit) of post-prison employment with propensity scores

Results of propensity score analysis: Predicted probability of post-prison employment

Table 9. Estimated probability of exiting unemployment (getting a job) upon release from prison
By vocation program certificate completion and K-group

Group	Exit probabilities		
	Mean	Standard deviation	K-group differences in means (Voc.pgm minus non-)
K-Group 1			1.1%
Vocation program certificate	19.4%	20.1%	
Non-certificate	18.3%	17.5%	
K-Group 2			-1.1%
Vocation program certificate	15.4%	17.1%	
Non-certificate	16.5%	16.4%	
K-Group 3			0.4%
Vocation program certificate	16.3%	18.5%	
Non-certificate	15.9%	16.2%	
K-Group 4			-1.1%
Vocation program certificate	16.2%	18.0%	
Non-certificate	17.3%	17.1%	
K-Group 5			-2.7%
Vocation program certificate	8.7%	11.1%	
Non-certificate	11.5%	12.3%	

Results of propensity score analysis

- Offenders who obtained certificates and who had pre-prison employment had higher probabilities of post-prison employment than all other offenders
 - Marginal effect of 1%: Each additional quarter of pre-prison employment increases the probability of employment for certificate obtainers by 1%
 - Vocational certificates can enhance employability for those with pre-prison employment and ties to labor markets
- Across the groups, those groups with more certificate completers had lower probabilities of employment than those with few completers;
 - Completing the certificate did not significantly enhance the chances of finding a job.
- Possible explanations:
 - Mismatch between jobs trained for in prison (e.g., trades such as barbering, drywall finishers, etc.) and demand for this type of labor
 - Voc program may serve internal (within prison) labor markets rather than external labor markets: Average time between certificate and release was 30 months; not “reentry”.
 - Discouragement arises when jobs in trades trained in cannot be found

Conclusions

- Local labor market conditions matter; expanding employment opportunities for all also benefits ex-prisoners
- Post-prison employment gains are short-lived and return to pre-prison employment levels within a year
- Pre-prison employment experiences predominate the effects:
 - Lots of unmeasured stuff that may be correlated with pre-prison employment but lots of control variables included and pre-prison effects persisted
- Program effects were generally weak
- Post-prison supervision makes a difference: Parolees most likely to find employment.