

Does community supervision reduce the risk of re-offending?

Two studies of offenders on
supervised bonds

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Background

- In 2007, more than 20,000 offenders in NSW were released into the community on an undertaking that they will not re-offend
- About a third of these offenders were placed under some form of supervision
- Little is known (in Australia) about the effectiveness of this supervision in reducing the risk of re-offending

Past research

- MacKenzie 2002, reviewed 14 studies (three at level 5) and found “no evidence that increased surveillance in the community [deters] offenders from committing crimes.”
- Aos et al. (2006), reviewed 23 studies and came to the same conclusion.
- Aos et al. noted, however, that intensive supervision + treatment produced an average 17 per cent reduction in adult recidivism

Limitations of past research

- In NSW, offenders are assessed in terms of their risk of re-offending *and* their criminogenic needs
- The level of supervision/support depends on the outcome of this assessment
- Some get intensive supervision and lots of support, others do not
- Not clear what effect this arrangement has on risk of re-offending

Aims of the two studies

- See whether offenders given supervised bonds (BWS) are, other things being equal, less likely to re-offend than those given unsupervised bonds (BWOS)
- Assess the level of supervision and support provided to offenders placed on supervised bonds

The problem of selection bias

- Offenders who are more at risk of re-offending are more likely to get a supervised bond
- Higher rates of re-offending among BWS offenders would be expected, because of selection bias—we need to control for this

Propensity matching

- Build a model of who gets treatment
- Use the model to generate predicted treatment probabilities
- Divide sample into groups matched on treatment probability
- Conduct covariate balance check
- Examine effect of treatment on outcome within each treatment group

Sample

- Treatment group: 4,432 offenders placed on a BWS in the year 2000
- Comparison group: 8,406 offenders placed on a BWOS in the year 2000
- Missing data: offenders where DCS and BOCSAR records were inconsistent (about 10 per cent of total)

Variables

- DV: time to first reconviction for an offence committed after the index court appearance (follow-up period = 5 years)
- IVs:
 - age, gender, ATSI status, principal offence, plea, # concurrent convictions, # prior conviction episodes, previous breach of court order, previous suspended sentence, previous imprisonment, previous periodic detention, bail status

Analysis

1. χ^2 tests of bi-variate association between each IV and risk of a supervised order
2. Logistic regression modelling of significant factors in step 1
3. χ^2 tests for covariate balance checks
4. Survival analysis and binomial tests of time to re-conviction and proportion reconvicted within groups matched on the probability of receiving a supervised order

Results

Table 1: Descriptive data for dichotomous variables

Variable value	Number	Percent
Male	10,501	81.8
Previous breach	1,553	12.1
Previous F/T prison	1,392	10.8
Previous PD	396	3.1
Previous SS	27	.2
On bail	5,650	44.0
Supervised bond	4,432	34.5
Reconvicted within 5 years	7,476	58.2

Table 2: Descriptive data for multi-category variables

Variable	N of cases	Percent of cases
<i>Age</i>		
10-25	4,469	34.9
26-35	4,401	34.4
36-45	2,727	21.3
46 +	1,215	9.5
<i>ATSI status</i>		
ATSI	2,024	15.8
Non-ATSI	10,268	80.0
Unknown	546	4.3
<i>Principal offence</i>		
Driving	3,048	23.7
Violence	3,682	28.7
Justice	1,229	9.6
Property	3,515	27.4
Drugs	789	6.1
Other	575	4.5
<i>Plea</i>		
Not guilty	1,007	7.8
Guilty	10,970	85.4
No plea entered	861	6.7
<i>Number of concurrent convictions</i>		
None	7,183	56.0
1-3 concurrent	5,355	41.7
4+ concurrent	300	2.3
<i>Number of prior adult and juvenile convictions</i>		
None	4,121	32.1
One	2,960	23.1
Two	1,871	14.6
Three	1,257	9.8
Four or more	2,629	20.5

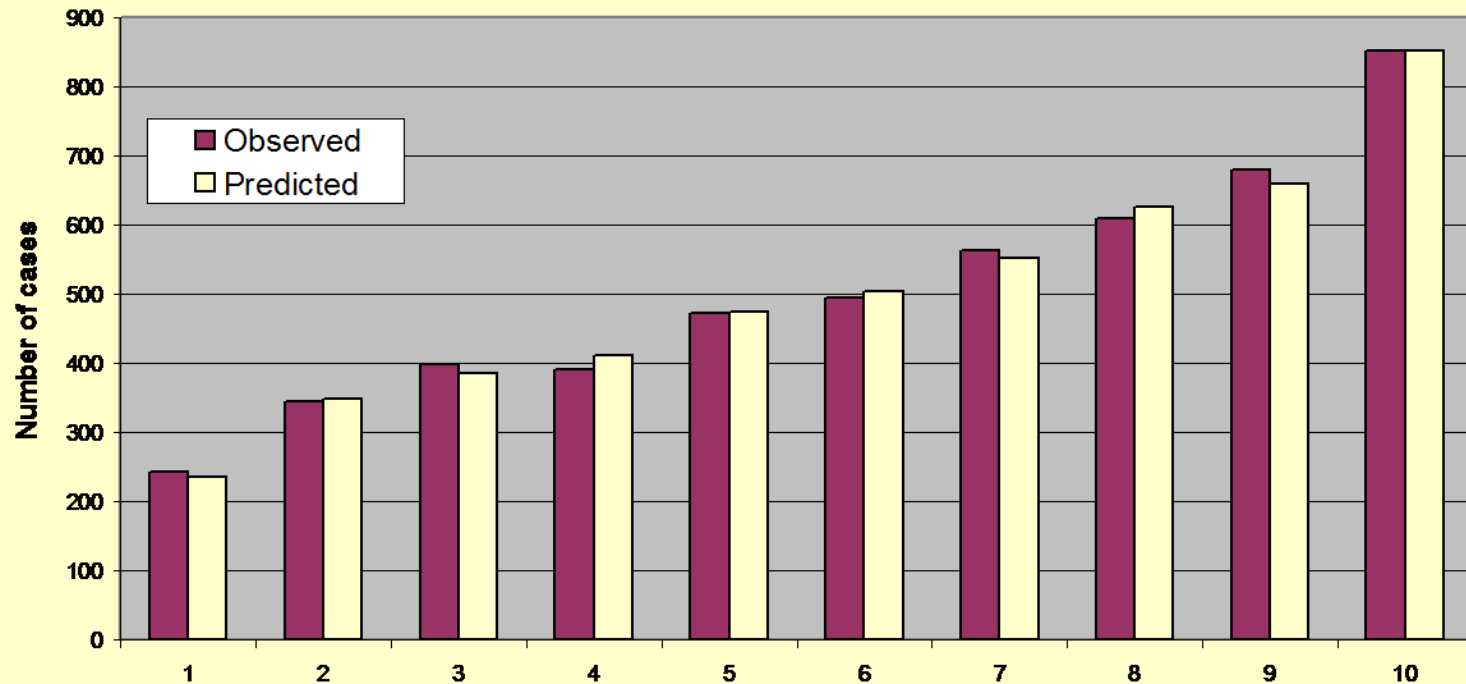
Table 4: Risk of receiving a supervised order (reduced model)

Variable	p-value	Odds ratio
On bail	.000	1.272
<i>Plea</i>	.000	
Guilty v not guilty	.000	1.745
Unknown v not guilty	.000	1.809
<i>ATSI status</i>	.000	
Non-ATSI v unknown	.000	2.597
ATSI v unknown	.000	2.457
<i>Concurrent Offences</i>	.000	
1-3 concurrent v none	.000	1.340
4+ concurrent v none	.000	1.979
<i>Prior record</i>	.000	
One v none	.000	1.475
Two v none	.000	1.830
Three v none	.000	1.924
Four + v none	.000	2.274
<i>Index offence</i>	.000	
Other v driving	.057	1.333
Violence v driving	.002	1.175
Justice v driving	.038	1.129
Property v driving	.000	1.493
Drugs v driving	.000	1.683
Constant	.000	.051

Hosmer-Lemeshow = 6.706, df = 8, p = 0.569; AUC = .638

Predictive accuracy of model

Bonds with supervision (observed v predicted)



$$\chi^2 = 7.828, df = 8, p = .450$$

Covariate balance check

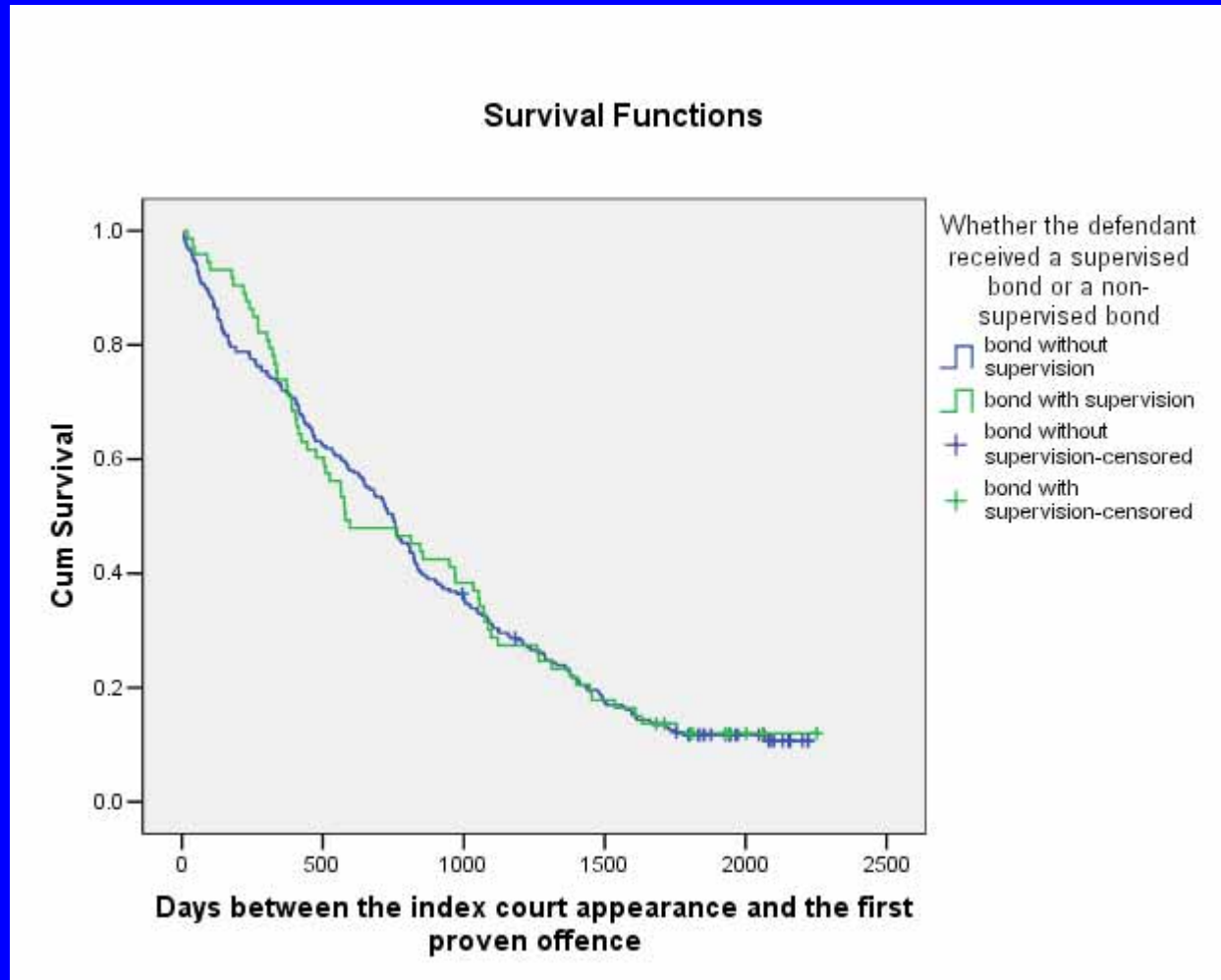
- 10 risk groups x 6 variables = 60 tests
- Alpha level set at 0.01 (reduce type 1 error)
- One test significant
- More BWOS offenders pleaded not guilty or had no plea recorded against them

Results:

proportion re-offending in five years

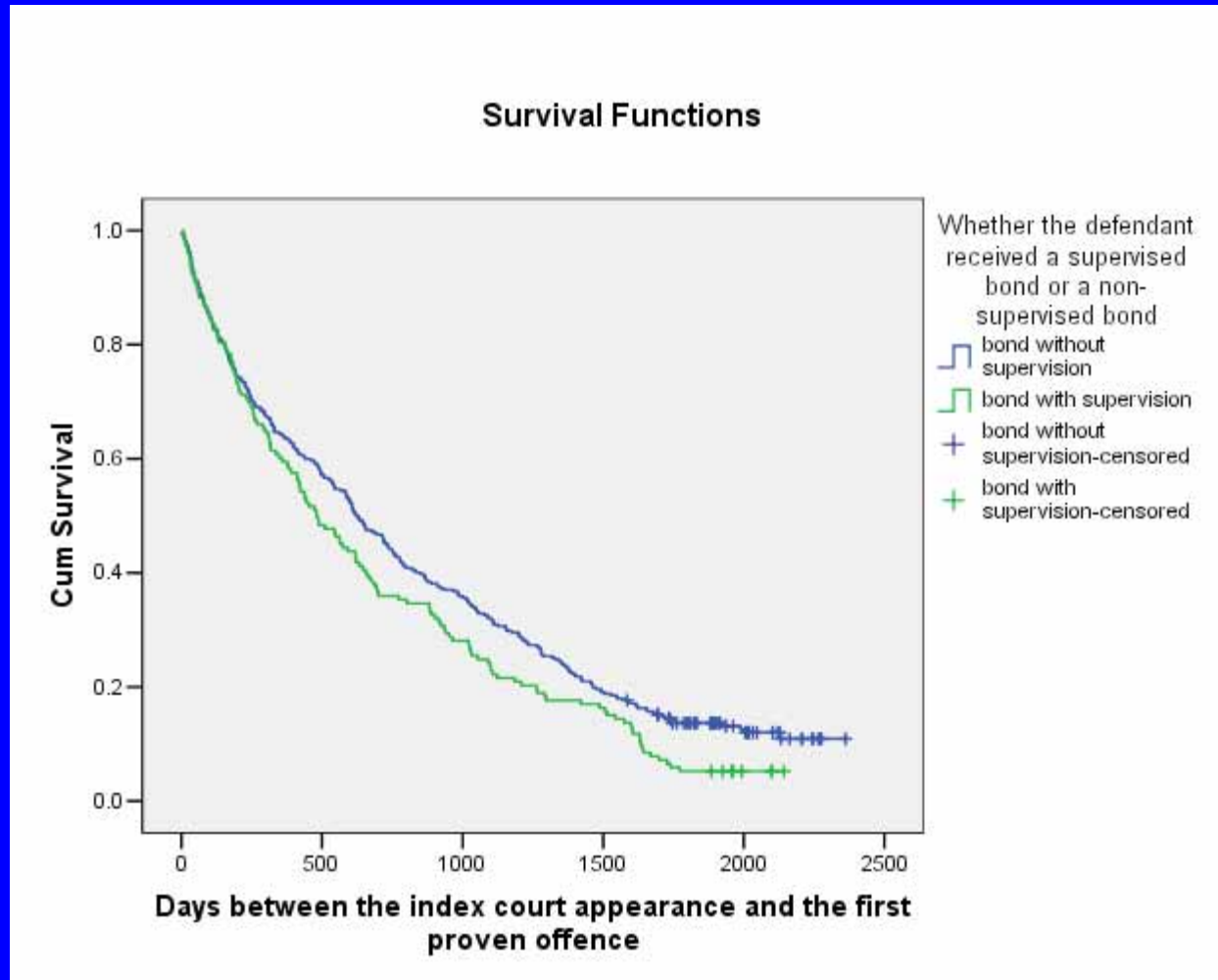
Effect of supervision on risk of re-offending			
P(supervised order)	BWOS	BWS	p-value
RG1(decile 1)	21.7	29.1	0.021
RG2 (decile 2)	41.6	50.7	0.016
RG3 (decile 3)	41.3	46.5	0.115
RG4 (decile 4)	52.2	53.4	0.689
RG5 (decile 5)	55.1	54.9	0.968
RG6 (decile 6)	63.8	63.5	0.931
RG7 (decile 7)	71.0	68.8	0.395
RG8 (decile 8)	71.5	75.9	0.100
RG9 (decile 9)	76.5	78.0	0.530
RG10 (decile 10)	81.6	84.4	0.169
N = 12,838	N = 8,406	N = 4432	

Effect of supervision on time to re-offend: Supervision group 1



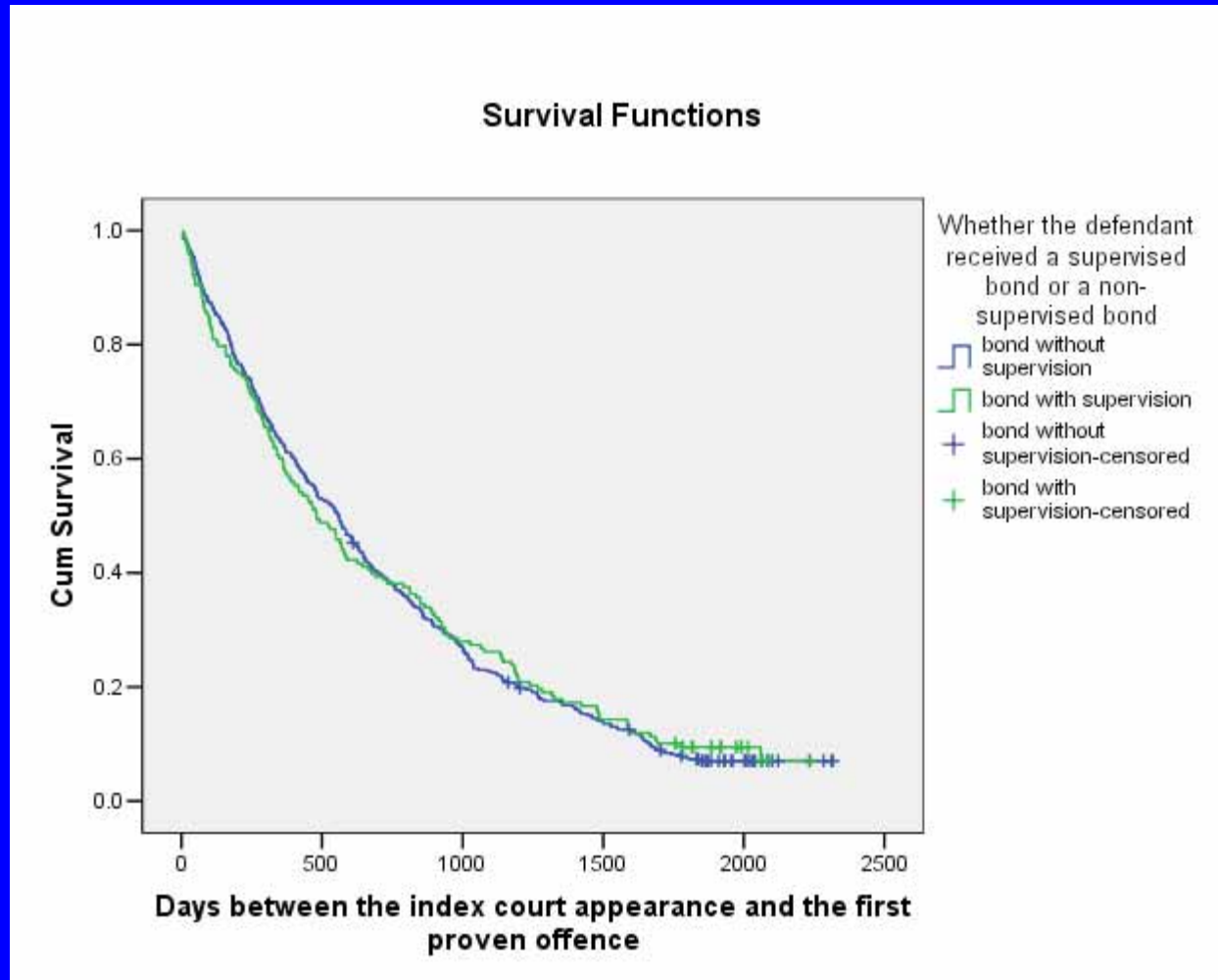
Mean survival time (BWS = 878 days, BWOS = 860 days)

Effect of supervision on time to re-offend: Supervision group 2



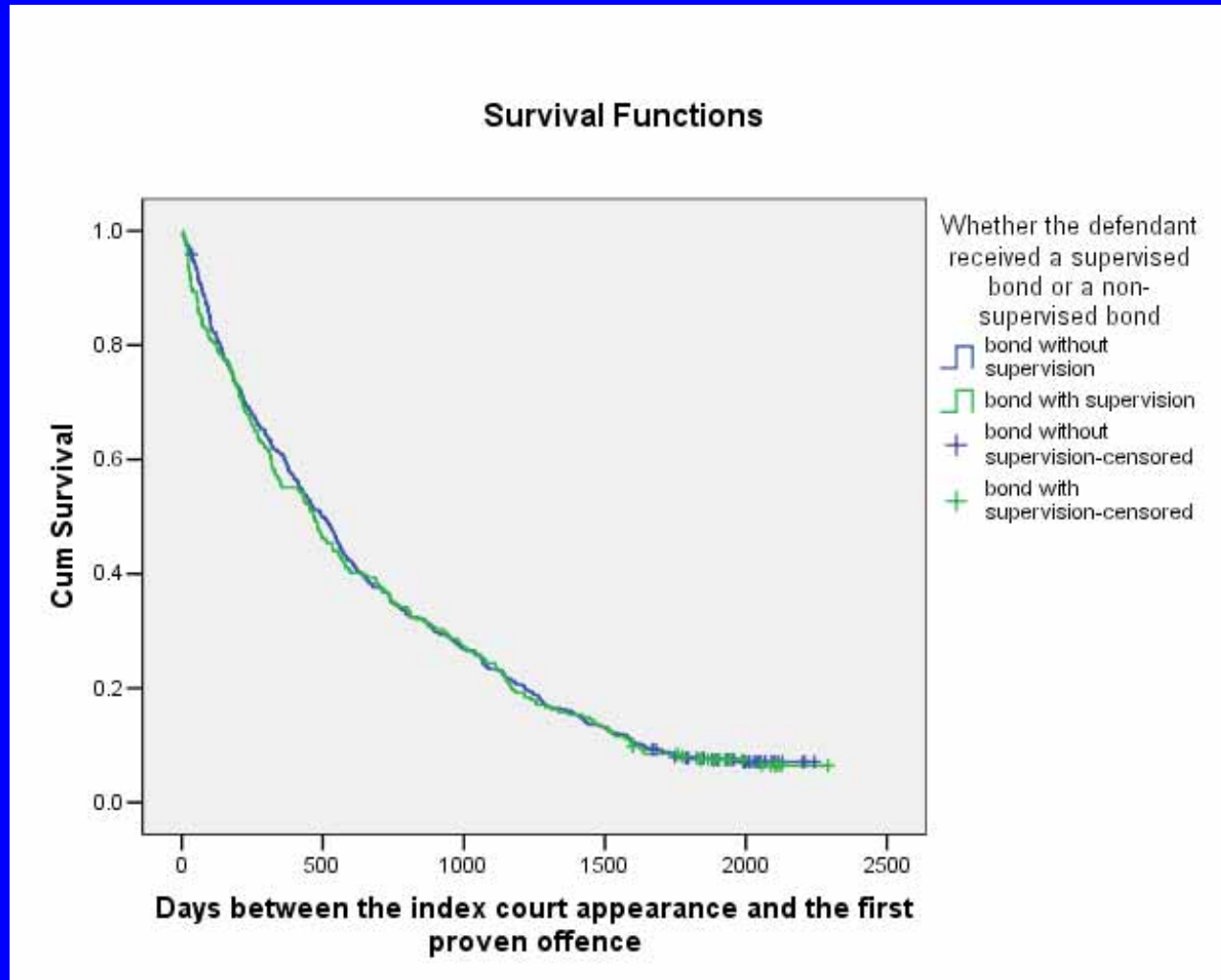
Mean survival time (BWS = 690 days, BWOS = 844 days)

Effect of supervision on time to re-offend: Supervision group 3



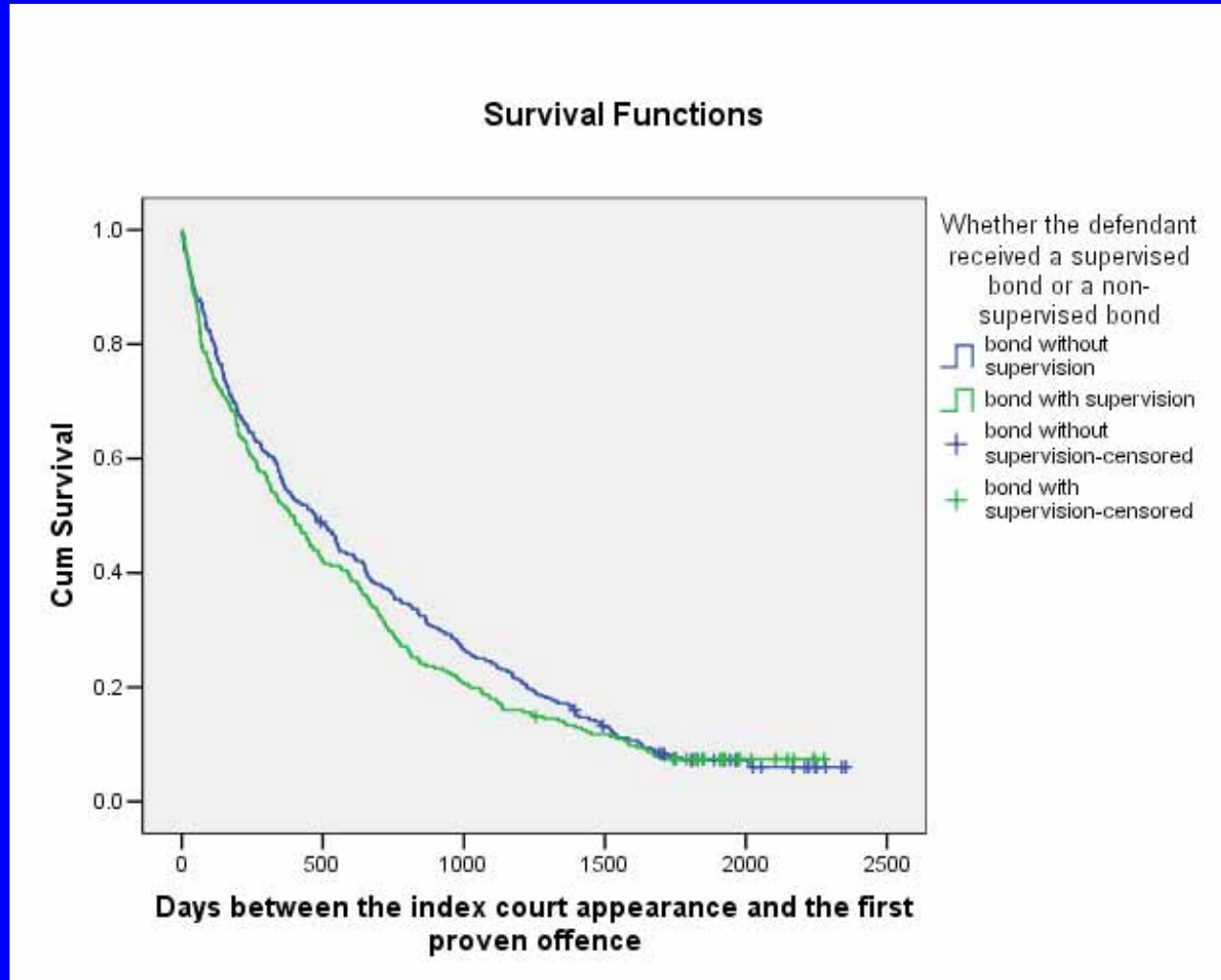
Mean survival time (BWS = 724 days, BWOS = 727 days)

Effect of supervision on time to re-offend: Supervision group 4



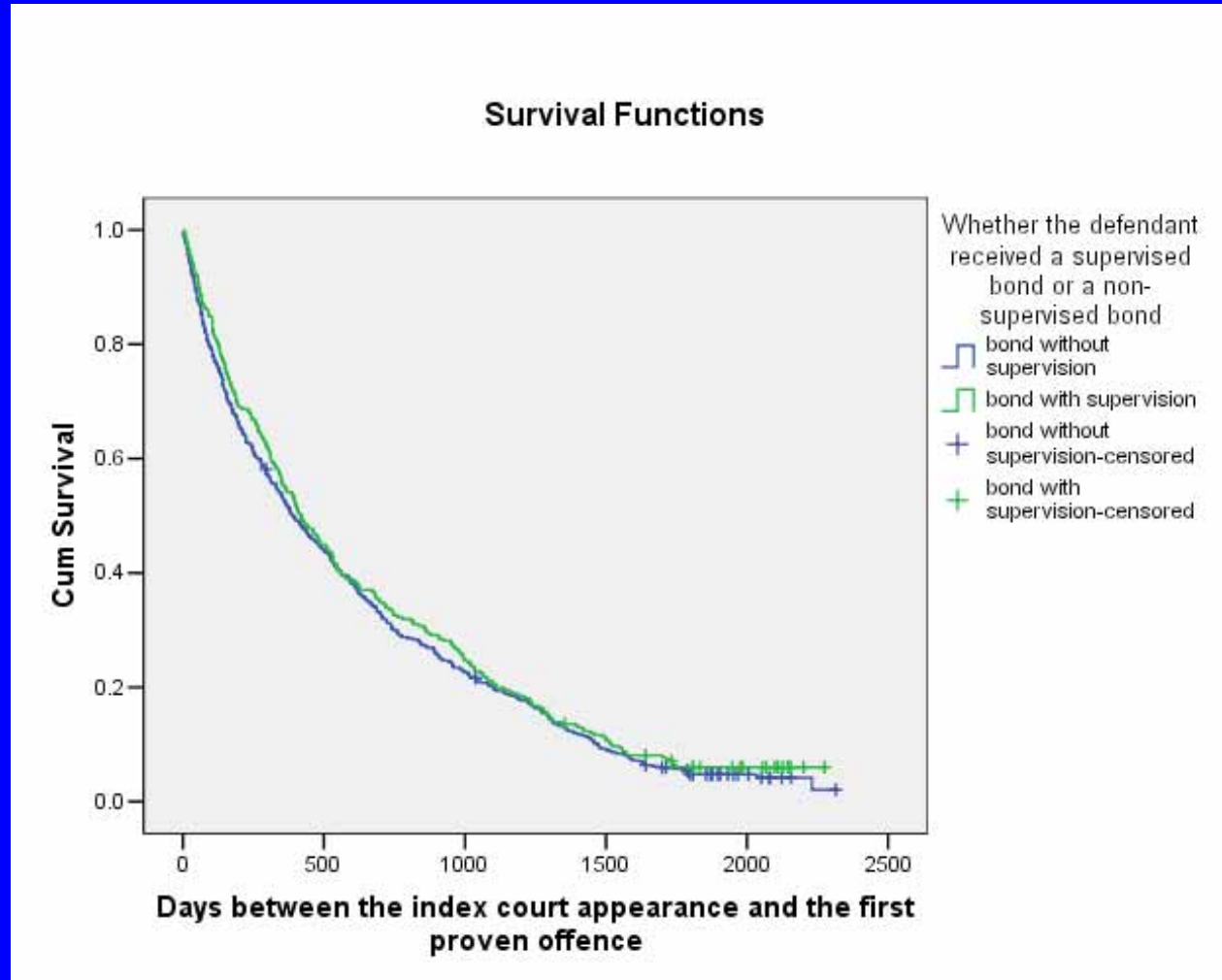
Mean survival time (BWS = 679 days, BWOS = 693 days)

Effect of supervision on time to re-offend: Supervision group 5



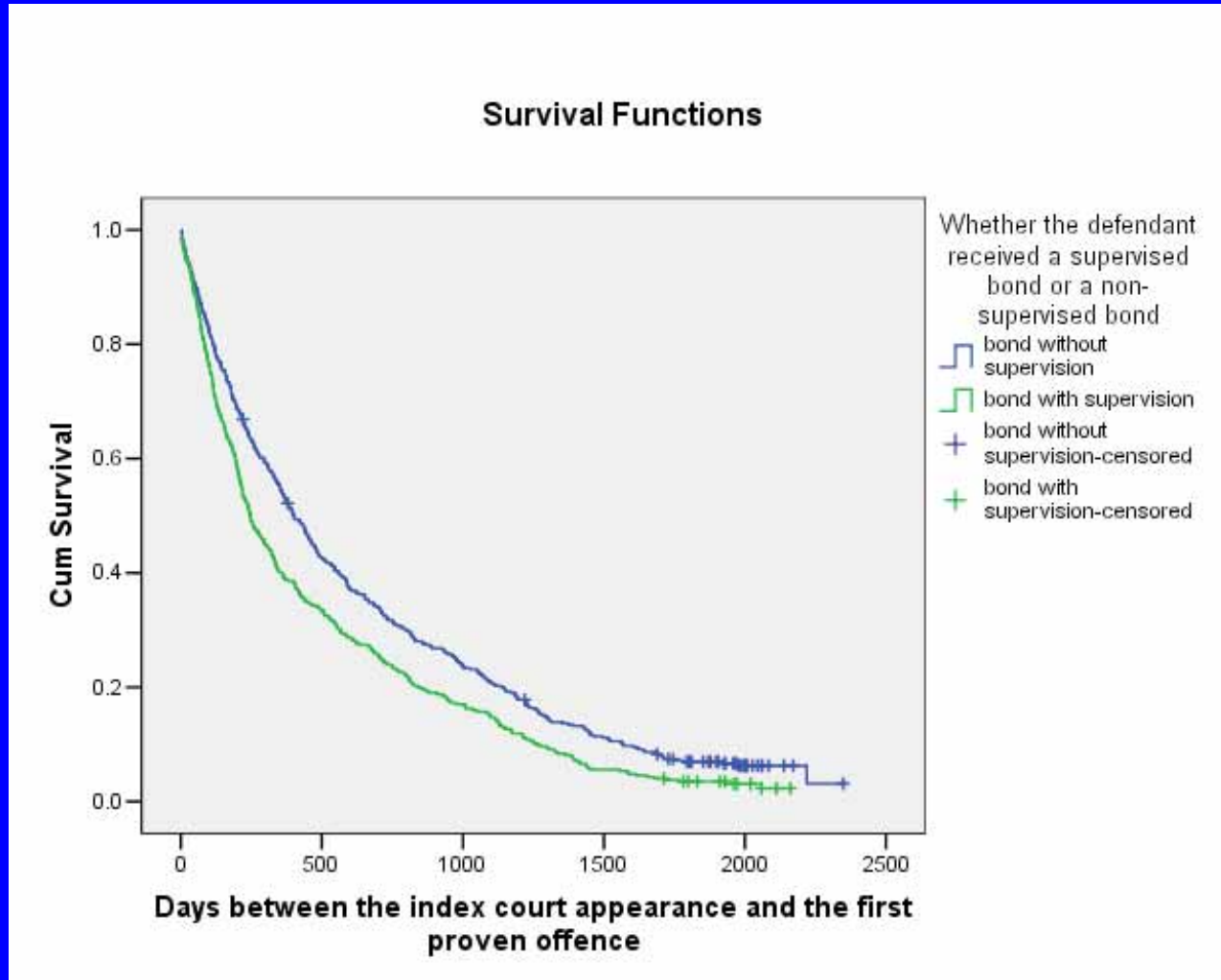
Mean survival time (BWS = 610 days, BWOS = 684 days)

Effect of supervision on time to re-offend: Supervision group 6



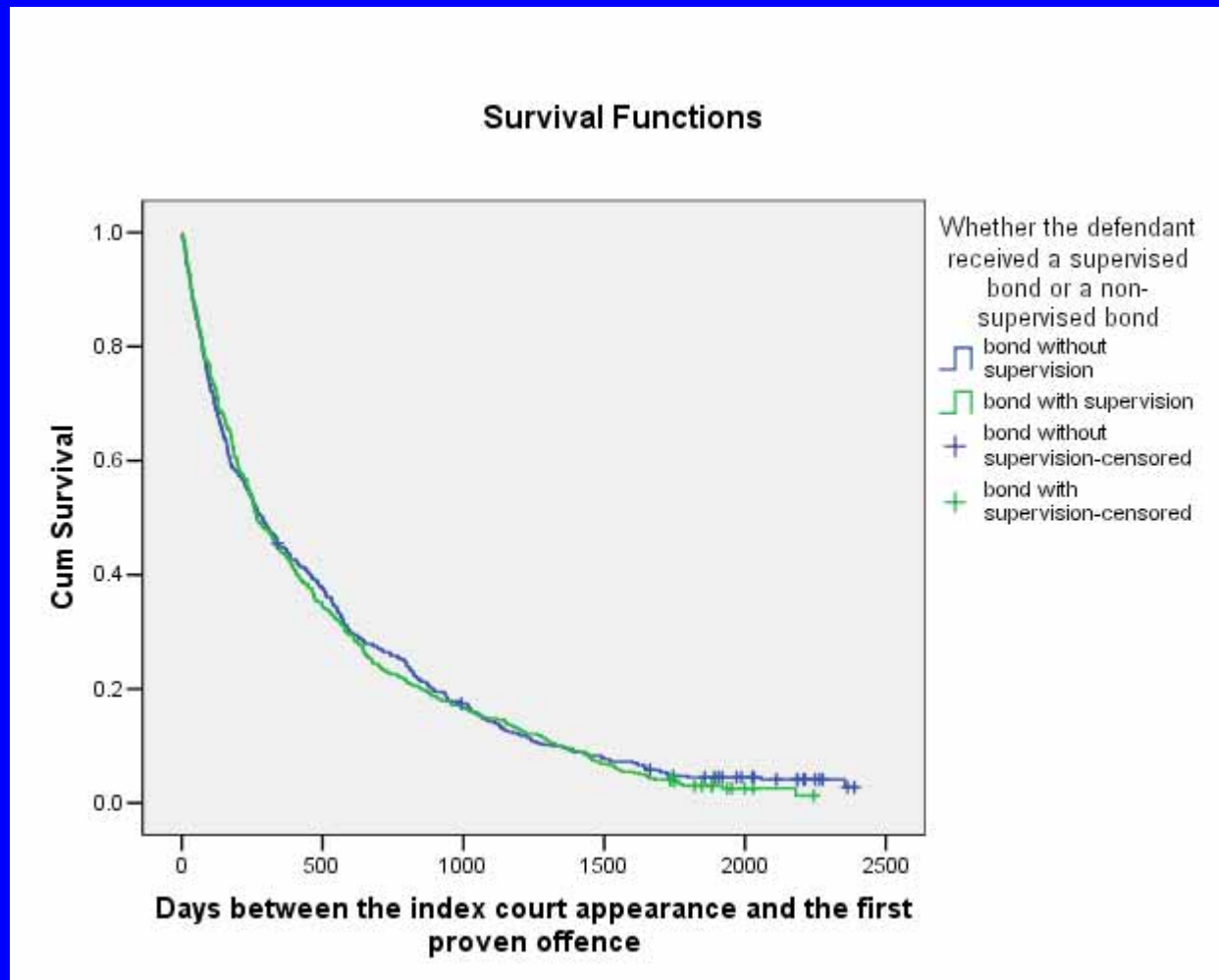
Mean survival time (BWS = 645 days, BWOS = 602 days)

Effect of supervision on time to re-offend: Supervision group 7



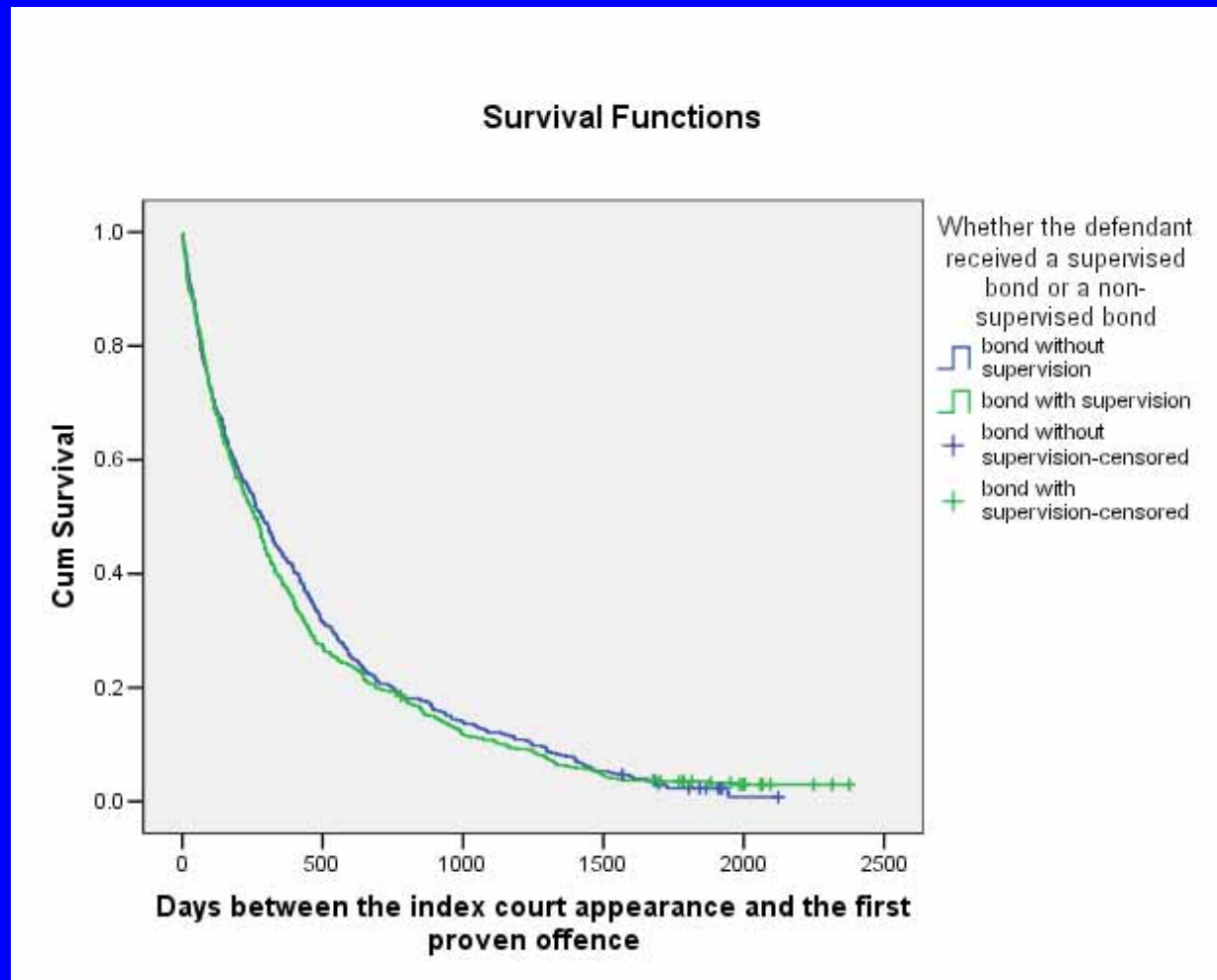
Mean survival time (BWS = 479 days, BWOS = 635 days)

Effect of supervision on time to re-offend: Supervision group 8



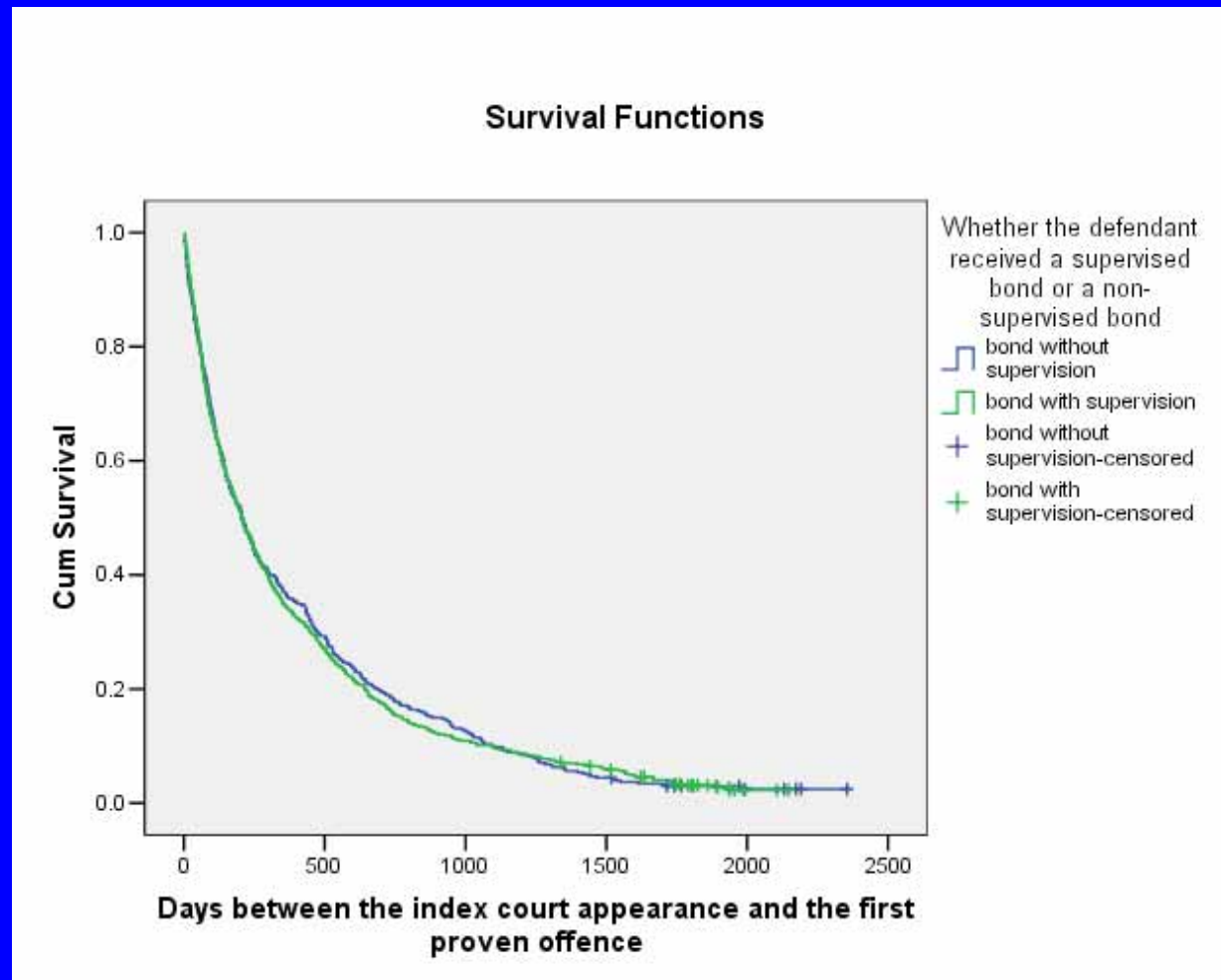
Mean survival time (BWS = 493 days, BWOS = 519 days)

Effect of supervision on time to re-offend: Supervision group 9



Mean survival time (BWS = 436 days, BWOS = 454 days)

Effect of supervision on time to re-offend: Supervision group 10



Mean survival time (BWS = 400 days, BWOS = 415 days)

Conclusion

- Other things being equal, offenders placed on supervised bonds are no less likely to re-offend than offenders placed on unsupervised bonds
- This conclusion holds up, regardless of whether we are looking at high risk offenders or low risk offenders
- Now over to Lily who is going to explore a possible explanation for these results