

ANEXO II – Estimação e Testes

```
log: C:\Documents and Settings\Isa\Os meus documentos\Doutoramento\Estima
> ção\Estimação e testes.smcl
log type: smcl
opened on: 16 Nov 2005, 12:46:35
```

```
. use "C:\Documents and Settings\Isa\Os meus
documentos\Doutoramento\Estimação\Da
> dos1.dta", replace
```

```
. stcox lnaagr cpropat inform res idade exp escol macaagr rend1 rend2 cons sust v
> aried tinst, robust
```

```
failure _d: adop
analysis time _t: tempo
```

```
Iteration 0: log pseudo-likelihood = -125.50743
Iteration 1: log pseudo-likelihood = -110.64041
Iteration 2: log pseudo-likelihood = -108.9105
Iteration 3: log pseudo-likelihood = -108.87901
Iteration 4: log pseudo-likelihood = -108.879
Refining estimates:
Iteration 0: log pseudo-likelihood = -108.879
```

Cox regression -- Breslow method for ties

```
No. of subjects   =      64      Number of obs   =      64
No. of failures   =      35
Time at risk      =      783
Wald chi2(14)     =      72.25
Log pseudo-likelihood = -108.879      Prob > chi2   =      0.0000
```

		Robust				
	_t	Haz. Ratio	Std. Err.	z	P> z	[95% Conf. Interval]
lnaagr		2.036978	.4843258	2.99	0.003	1.2782 3.246189
cpropat		.9982318	.0056041	-0.32	0.753	.9873082 1.009276
inform		1.207848	.099215	2.30	0.022	1.028236 1.418834
res		1.101031	.7654875	0.14	0.890	.2818415 4.301244
idade		.9756918	.0225077	-1.07	0.286	.93256 1.020819
exp		1.00396	.0193385	0.21	0.837	.9667638 1.042587
escol		1.013937	.0497532	0.28	0.778	.9209645 1.116294
macaagr		1.020932	.0060669	3.49	0.000	1.00911 1.032892
rend1		1.614912	.8554091	0.90	0.366	.5718376 4.560633
rend2		1.579902	.7473044	0.97	0.334	.625181 3.992586
cons		1.495844	.5872045	1.03	0.305	.6930127 3.22873
sust		2.163475	3.853171	0.43	0.665	.0659407 70.98234

```

    varied | 4.557857 7.901139 0.88 0.382 .1524704 136.2499
    tinst  | .947082 .0359677 -1.43 0.152 .8791464 1.020267
-----

. linktest

    failure _d: adop
    analysis time _t: tempo

Iteration 0: log likelihood = -125.50743
Iteration 1: log likelihood = -112.40287
Iteration 2: log likelihood = -108.50952
Iteration 3: log likelihood = -108.48079
Iteration 4: log likelihood = -108.48076
Refining estimates:
Iteration 0: log likelihood = -108.48076

Cox regression -- Breslow method for ties

No. of subjects =      64          Number of obs  =      64
No. of failures =      35
Time at risk   =      783
                LR chi2(2)    =    34.05
Log likelihood = -108.48076    Prob > chi2    =    0.0000

-----
    _t |   Coef.   Std. Err.   z  P>|z|   [95% Conf. Interval]
-----+-----
    _hat | 1.764887 .9137497   1.93 0.053   -.0260296   3.555804
    _hatsq | -.1205895 .1393311  -0.87 0.387   -.3936734   .1524944
-----

. stcox lnaagr cpropat inform res idade exp escol macaagr rend1 rend2 cons sust v
> aried tinst, schoenfeld(sch*) scaledsch(sca*)

    failure _d: adop
    analysis time _t: tempo

Iteration 0: log likelihood = -125.50743
Iteration 1: log likelihood = -110.64041
Iteration 2: log likelihood = -108.9105
Iteration 3: log likelihood = -108.87901
Iteration 4: log likelihood = -108.879
Refining estimates:
Iteration 0: log likelihood = -108.879

Cox regression -- Breslow method for ties

No. of subjects =      64          Number of obs  =      64
No. of failures =      35

```

Time at risk = 783

LR chi2(14) = 33.26

Log likelihood = -108.879

Prob > chi2 = 0.0026

_t	Haz. Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
lnaagr	2.036978	.6187056	2.34	0.019	1.123168	3.694262
cpropat	.9982318	.0065192	-0.27	0.786	.9855359	1.011091
inform	1.207848	.1510833	1.51	0.131	.9452353	1.543421
res	1.101031	.8960377	0.12	0.906	.2233969	5.426525
idade	.9756918	.0222869	-1.08	0.281	.9329738	1.020366
exp	1.00396	.0205958	0.19	0.847	.9643938	1.04515
escol	1.013937	.0539279	0.26	0.795	.9135626	1.125339
macaagr	1.020932	.0071298	2.97	0.003	1.007053	1.035002
rend1	1.614912	1.010411	0.77	0.444	.4737758	5.504591
rend2	1.579902	.8472611	0.85	0.394	.552271	4.519681
cons	1.495844	.6742981	0.89	0.372	.6182741	3.619027
sust	2.163475	4.859528	0.34	0.731	.0264979	176.6416
varied	4.557857	9.39879	0.74	0.462	.0800741	259.4356
tinst	.947082	.0298252	-1.73	0.084	.8903932	1.00738

. stphtest, detail

Test of proportional hazards assumption

Time: Time

	rho	chi2	df	Prob>chi2
-----+-----				
lnaagr	0.04036	0.06	1	0.8045
cpropat	0.07948	0.24	1	0.6229
inform	0.08797	0.30	1	0.5857
res	0.04693	0.11	1	0.7400
idade	-0.03674	0.06	1	0.8030
exp	0.04557	0.08	1	0.7812
escol	-0.09333	0.37	1	0.5447
macaagr	0.11087	0.49	1	0.4845
rend1	-0.00280	0.00	1	0.9850
rend2	-0.01982	0.02	1	0.8991
cons	-0.01355	0.01	1	0.9235
sust	0.28131	2.66	1	0.1028
varied	0.04084	0.06	1	0.8025
tinst	-0.17936	1.72	1	0.1891
-----+-----				
global test		6.87	14	0.9397
-----+-----				

. stcox lnaagr cpropat inform res idade exp escol macaagr rend1 rend2 cons sust v

```
> aried tinst, efron mgale(mg)
```

```
failure _d: adop  
analysis time _t: tempo
```

```
Iteration 0: log likelihood = -123.76047  
Iteration 1: log likelihood = -108.06886  
Iteration 2: log likelihood = -104.39796  
Iteration 3: log likelihood = -104.2751  
Iteration 4: log likelihood = -104.27502  
Refining estimates:  
Iteration 0: log likelihood = -104.27502
```

```
Cox regression -- Efron method for ties
```

```
No. of subjects =      64          Number of obs  =      64  
No. of failures =      35  
Time at risk   =      783  
LR chi2(14)    =    38.97  
Log likelihood = -104.27502      Prob > chi2    =    0.0004
```

	_t	Haz. Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
	+						
lnaagr		1.974223	.6092509	2.20	0.028	1.078234	3.614759
cpropat		.9986954	.0066983	-0.19	0.846	.9856528	1.011911
inform		1.257816	.1640601	1.76	0.079	.9740758	1.624207
res		1.087494	.9066239	0.10	0.920	.2122247	5.572602
idade		.9672682	.0227978	-1.41	0.158	.9236017	1.012999
exp		1.008016	.0215717	0.37	0.709	.9666102	1.051194
escol		1.027522	.0546496	0.51	0.610	.9258046	1.140415
macaagr		1.023917	.007352	3.29	0.001	1.009608	1.038428
rend1		1.684268	1.070034	0.82	0.412	.4848793	5.850442
rend2		1.641865	.8976416	0.91	0.364	.5622997	4.794098
cons		1.624278	.7429738	1.06	0.289	.6626823	3.981211
sust		2.285952	5.188435	0.36	0.716	.0267357	195.4532
varied		5.416073	11.04938	0.83	0.408	.0993439	295.2757
tinst		.9394466	.030891	-1.90	0.057	.8808111	1.001985

```
. predict cs, csnell  
(11 missing values generated)
```

```
. stset cs, fail(adop)
```

```
failure event: adop != 0 & adop < .  
obs. time interval: (0, cs]  
exit on or before: failure
```

```

75 total obs.
11 event time missing (cs>=.)          PROBABLE ERROR
-----
64 obs. remaining, representing
35 failures in single record/single failure data
35 total analysis time at risk, at risk from t =      0
    earliest observed entry t =      0
    last observed exit t = 2.017827

. sts gen H = na

. line H cs cs, sort ytitle(" ") legend(cols(1)) title("Figura 7 - Risco cumulati
> vo dos resíduos de Cox-Snell", size(medsmall)) legend(size(medsmall))

. graph display, scheme(sj)

.
. save "C:\Documents and Settings\Isa\Os meus
documentos\Doutoramento\Estimação\D
> ados1.dta", replace
file C:\Documents and Settings\Isa\Os meus
documentos\Doutoramento\Estimação\Dado
> s1.dta saved

. log close
  log: C:\Documents and Settings\Isa\Os meus documentos\Doutoramento\Estima
> ção\Estimação e testes.smcl
  log type: smcl
  closed on: 16 Nov 2005, 12:47:37
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```