

# Appendix A

## Methodology Notes

### Unbiased diff-in-diff estimator

The regression function takes the following form

$$E(y_{it}) = \begin{cases} \alpha & TREAT = 0, POST = 0 \\ \alpha + \beta & TREAT = 1, POST = 0 \\ \alpha + \gamma & TREAT = 0, POST = 1 \\ \alpha + \beta + \gamma + \delta & TREAT = 1, POST = 1. \end{cases}$$

Hence the diff-in-diff estimator is unbiased

$$\begin{aligned} E[\hat{\delta}] &= E[(\bar{y}_{11} - \bar{y}_{01}) - (\bar{y}_{10} - \bar{y}_{00})] \\ &= E(\bar{y}_{11}) - E(\bar{y}_{01}) - E(\bar{y}_{10}) + E(\bar{y}_{00}) \\ &= \alpha + \beta + \gamma + \delta - \alpha - \gamma - \alpha - \beta + \alpha \\ &= \delta \end{aligned}$$

since  $E(y_{it}) = \bar{y}_{it}$  (Albouy, 2004).

# **Appendix B**

## **Tables**

Table B.1: Corporatization in the Literature

Studies	Examined effect	Methodology
<b>category 1:</b>		
<i>non-performance effect / hospitals</i>		
Kahancová and Szabó (2012)	employment relations	cross-country analysis (applying theoretical mechanism how corporatization affects bargaining patterns, analysing health-care reforms and employment relations over time)
Eid (2001)	corporate board design in corporatized hospitals	application of the multitasking common agency model (analysis of interviews, documents, draft and legislation)
<b>category 2:</b>		
<i>performance effect / non-hospitals</i>		
Bradbury (1997)	return on equity, return on assets, return on revenues	comparative analysis of companies (cross-sectional and time series)
Aivazian et al. (2005)	return on assets, return on sales, real output per employee, real sales per employee, Investment to sales, Investment to assets	statistical procedure (fixed effect and random effect estimators)
Queneville et al. (2008)	output, productivity, financial performance, quality	statistical procedure (Wilcoxon signed-rank test)
Bilodeau et al. (2007)	output, revenues, ratio of revenues to expenditures, unit cost, labor productivity	statistical procedure (t-test, Wilcoxon signed-rank test)
Laurin and Vinning (2012)	revenues, revenues/expenditures, primary output, average cost, labor productivity	statistical procedure (confidence intervals, binomial proportion test)
Cambini et al. (2011)	production cost	econometric analysis (random effects estimator)
<b>category 3:</b>		
<i>performance effect / hospitals</i>		
Fidler et al. (2007)	no. of buildings, no. of beds, ALOS, bed occupancy, number of hospitalizations, annual turn-over	case study - no empirical evidence (comparisons across states)
Rego et al. (2010)	DEA efficiency measures	data envelopment analysis
Carneiro (2011)	cost per day, cost per patient, ALOS, case-mix index, social cases, caesareans, laparoscopic cholecystectomy, AMI treated intensively, surgical complications, mortality, decubitus ulcers, AMI mortality	econometric analysis (random effects estimator)

Table B.2: Analyzed Hospitals

No.	Hospitals (a.s.)	No.	Hospitals (p.o.)
1	Nemocnice České Budějovice, a.s.	8	Fakultní nemocnice Hradec Králové
2	Nemocnice Český Krumlov, a.s.	14	Nemocnice Jablonec nad Nisou, p.o.
3	Nemocnice Jindřichův Hradec, a.s.	16	Masarykova městská nemocnice Jilemnice
4	Nemocnice Písek, a.s.	17	Nemocnice s poliklinikou v Semilech
5	Nemocnice Prachatice, a.s.	18	Fakultní nemocnice u sv. Anny v Brně
6	Nemocnice Strakonice, a.s.	19	Nemocnice Milosrdných bratří Brno, p.o.
7	Nemocnice Tábor, a.s.	20	Fakultní nemocnice Brno
9	Oblastní nemocnice Jičín, a.s.	21	Vojenská nemocnice Brno
10	Oblastní nemocnice Náchod, a.s.	22	Nemocnice Ivančice, p.o.
11	Oblastní nemocnice Rychnov nad Kněžnou, a.s.	23	Nemocnice Břeclav, p.o.
12	Oblastní nemocnice Trutnov, a.s.	24	Městská nemocnice Hustopeče, p.o.
13	Nemocnice s poliklinikou Česká Lípa, a.s.	25	Nemocnice TGM Hodonín, p.o.
15	Krajská nemocnice Liberec, a.s.	26	Nemocnice Kyjov, p.o.
31	Chrudimská nemocnice, a.s.	27	Nemocnice Vyškov, p.o.
32	Pardubická krajská nemocnice, a.s.	28	Nemocnice Znojmo, p.o.
33	Svitavská nemocnice, a.s.	29	Fakultní nemocnice Olomouc
39	Bohumínská městská nemocnice, a.s.	30	Vojenská nemocnice Olomouc
40	Bílovecká nemocnice, a.s.	34	Nemocnice Krnov, p.o.
49	Domažlická nemocnice, a.s.	35	Nemocnice ve Frýdku-Místku, p.o.
50	Klatovská nemocnice, a.s.	36	Nemocnice Třinec, p.o.
52	Stodská nemocnice, a.s.	37	Nemocnice s poliklinikou Karviná-Ráj, p.o.
53	Rokycanská nemocnice, a.s.	38	Nemocnice s poliklinikou Havířov, p.o.
54	Krajská zdravotní, a.s. - Nem. Děčín	41	Slezská nemocnice v Opavě, p.o.
55	Krajská zdravotní, a.s. - Nem. Chomutov	42	Fakultní nemocnice Ostrava
56	Krajská zdravotní, a.s. - Nem. Most	43	Městská nemocnice Ostrava
57	Krajská zdravotní, a.s. - Nem. Teplice	44	Nemocnice Havlíčkův Brod, p.o.
58	Krajská zdravotní, a.s. - Masarykova nem.	45	Nemocnice Jihlava, p.o.
59	Nemocnice Rudolfa a Stefanie Benešov, a.s.	46	Nemocnice Pelhřimov, p.o.
60	Oblastní nemocnice Kladno, a.s.	47	Nemocnice Třebíč, p.o.
62	Oblastní nemocnice Kolín, a.s.	48	Nemocnice v N. město na Moravě, p.o.
63	Oblastní nemocnice Mladá Boleslav, a.s.	51	Fakultní nemocnice Plzeň
64	Oblastní nemocnice Příbram, a.s.	61	Nemocnice Slaný, p.o.
73	Kroměřížská nemocnice, a.s.	65	Nemocnice Na Františku
74	Uherskohradištská nemocnice, a.s.	66	Všeobecná fakultní nemocnice v Praze
75	Vsetínská nemocnice, a.s.	67	Fakultní Thomayerova nem. s poliklinikou
76	Krajská nemocnice T. Bati, a.s.	68	Nemocnice na Homolce
		69	Fakultní nemocnice v Motole
		70	Fakultní nemocnice Na Bulovce
		71	Ústřední vojenská nemocnice Praha
		72	Fakultní nemocnice Královské Vinohrady
		77	Městská nemocnice v Litoměřicích

Notes: Official names as of 2011. No. denotes the number of the hospital as used in our excel spreadsheet.

Table B.3: Correlation Matrix – Independent Variables

	<i>doc_bed</i>	<i>nur_bed</i>	<i>size_1</i>	<i>size_3</i>	<i>beds_ut</i>	<i>teach</i>	<i>unempl</i>	<i>salary</i>	<i>compet</i>	<i>city</i>
<i>doctors_bed</i>	1.0000									
<i>nurses_bed</i>	0.6711	1.0000								
<i>size_1</i>	-0.2093	-0.2816	1.0000							
<i>size_3</i>	0.2060	0.2492	-0.4467	1.0000						
<i>beds_utilization</i>	-0.1849	-0.1444	0.1281	-0.0692	1.0000					
<i>teaching_status</i>	0.3077	0.3168	-0.2190	0.4902	-0.0712	1.0000				
<i>unemployment</i>	-0.2511	-0.2312	-0.0085	0.0227	0.0980	-0.2523	1.0000			
<i>salary</i>	0.5040	0.4659	-0.1058	0.2814	-0.0447	0.4813	-0.4310	1.0000		
<i>competition</i>	0.1393	0.1820	-0.0769	0.1911	0.1615	0.2650	0.0447	0.4627	1.0000	
<i>city</i>	0.2590	0.3521	-0.1937	0.3944	-0.0068	0.6149	-0.0623	0.4424	0.3527	1.0000

*(obs = 809)*

## Collinearity Diagnostics

Table B.4: VIF and PCA

Variable	VIF test		PCA	
	VIF	Tolerance	Eigenval	Cond Index
<i>doctors_bed</i>	1.95	0.5134	1.4523	2.3565
<i>nurses_bed</i>	1.97	0.5076	0.6389	3.5529
<i>size_1</i>	1.40	0.7135	0.2872	5.2996
<i>size_3</i>	1.71	0.5839	0.2149	6.1256
<i>beds_utilization</i>	1.16	0.8606	0.1516	7.2928
<i>teaching_status</i>	2.34	0.4268	0.1172	8.2951
<i>unemployment</i>	1.61	0.6221	0.0416	13.9233
<i>salary</i>	2.65	0.3772	0.0181	21.0868
<i>competition</i>	1.76	0.5673	0.0102	28.0728
<i>city</i>	2.14	0.4666	0.0030	52.1188
	Mean		Condition	
	VIF	1.87	number	52.1188

(*obs* = 809)

Note: Only observations with available dependent variable analyzed

VIF – Variance inflation factor

PCA – Principal component analysis

Table B.5: Variance-Decomposition Proportions

	1	2	3	4	5	6	7	8	9	10	11
<i>intercept</i> (1)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>doctors_bed</i> (2)	0.00	0.00	0.00	0.12	0.03	0.00	0.07	0.00	0.00	0.00	0.03
<i>nurses_bed</i> (3)	0.00	0.00	0.00	0.43	0.03	0.00	0.14	0.01	0.00	0.00	0.04
<i>size_1</i> (4)	0.00	0.00	0.00	0.23	0.65	0.00	0.02	0.00	0.00	0.01	0.22
<i>size_3</i> (5)	0.00	0.01	0.00	0.07	0.11	0.00	0.32	0.08	0.00	0.00	0.51
<i>beds_utilization</i> (6)	0.00	0.01	0.01	0.04	0.15	0.00	0.40	0.40	0.00	0.01	0.11
<i>teaching_status</i> (7)	0.00	0.02	0.01	0.00	0.01	0.00	0.02	0.04	0.00	0.65	0.04
<i>unemployment</i> (8)	0.01	0.33	0.02	0.08	0.01	0.07	0.00	0.11	0.01	0.05	0.01
<i>salary</i> (9)	0.00	0.51	0.93	0.02	0.00	0.01	0.01	0.00	0.01	0.00	0.02
<i>competition</i> (10)	0.00	0.11	0.01	0.00	0.00	0.36	0.01	0.14	0.52	0.06	0.00
<i>city</i> (11)	0.98	0.00	0.02	0.00	0.00	0.56	0.00	0.23	0.45	0.22	0.02

Table B.6: Collinearity Statistics and Critical Values

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Statistic:	VIF	Tolerance	Eigenval	Cond Index	Proportion of Variation
Critical values	> 10	< 0.1	< 0.01	> 50	> 0.7

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Notes: Critical values only as a warning signals of multicollinearity (i.e. rule of thumb).

Table B.7: Corporatization Effect in 2003 &amp; 2004

<i>Hausman-Taylor Estimation Results</i>				
<i>Variables/Model</i>	<i>rev_days</i>	<i>cost_days</i>	<i>rev_inpat</i>	<i>cost_inpat</i>
<i>CORP</i>	-0.228**	-0.228**	-0.229*	-0.220**
	(0.101)	(0.096)	(0.119)	(0.103)
<i>POST</i>	0.138**	0.105*	0.0560	0.023
	(0.053)	(0.054)	(0.050)	(0.055)
<i>CORP</i> × <i>POST</i> <sup>a</sup>	0.160***	0.189***	0.048	0.076
	(0.044)	(0.043)	(0.044)	(0.048)
<i>beds_utilization</i>	-0.784***	-0.805***	-0.389**	-0.405**
	(0.186)	(0.183)	(0.156)	(0.149)
<i>doctors_bed</i>	0.258***	0.262***	0.180**	0.185**
	(0.067)	(0.065)	(0.073)	(0.067)
<i>nurses_bed</i>	0.892***	0.888***	0.611***	0.613***
	(0.130)	(0.142)	(0.111)	(0.119)
<i>salary</i>	0.842***	0.879***	0.837***	0.870***
	(0.206)	(0.189)	(0.200)	(0.184)
<i>unemployment</i>	0.110***	0.0996***	0.0975***	0.086***
	(0.025)	(0.026)	(0.024)	(0.024)
<i>competition</i>	-0.152	-0.0188	-0.254	-0.129
	(0.278)	(0.265)	(0.255)	(0.212)
<i>city</i>	0.166	0.0969	0.129	0.080
	(0.124)	(0.113)	(0.119)	(0.134)
<i>size_1</i>	-0.0739	-0.124	-0.034	-0.068
	(0.106)	(0.087)	(0.114)	(0.150)
<i>size_3</i>	-0.247	-0.224	-0.265	-0.244
	(0.187)	(0.174)	(0.212)	(0.172)
<i>teaching_status</i>	0.372	0.431	0.519	0.544*
	(0.311)	(0.300)	(0.314)	(0.320)
<i>constant</i>	-3.809**	-3.656**	-2.963	-2.978*
	(1.785)	(1.701)	(1.892)	(1.628)
<i>No. of Hospitals</i>	51	51	51	51
<i>No. of Observations</i>	362	362	362	362
<i>F/Wald chi-sq test</i>	231.210	208.860	1014.660	1064.370
<i>(p-value)</i>	0.000	0.000	0.000	0.000
<i>Sargan-Hansen statistic</i>	3.551	3.634	4.023	5.109
<i>(p-value)</i>	0.616	0.603	0.546	0.403

Notes: Standard errors in parentheses. Either cluster robust or bootstrapped standard errors reported (following the conservative principle defined in chapter 5).

\* $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

<sup>a</sup> Coefficients represent the differences of the financial performance of hospitals in the treatment group relative to performance in the control group after corporatization. Regression equation in log-log form.



Table B.8: Corporatization Effect in 2005

<i>Hausman-Taylor Estimation Results</i>				
<i>Variables/Model</i>	<i>rev_days</i>	<i>cost_days</i>	<i>rev_inpat</i>	<i>cost_inpat</i>
<i>CORP</i>	0.272** (0.123)	0.222** (0.086)	0.0898 (0.123)	0.046 (0.105)
<i>POST</i>	0.237*** (0.034)	0.244*** (0.031)	0.186*** (0.0312)	0.195*** (0.031)
<i>CORP</i> × <i>POST</i> <sup>a</sup>	-0.109** (0.053)	-0.0601* (0.033)	-0.0753 (0.0683)	-0.026 (0.047)
<i>beds_utilization</i>	-0.478*** (0.182)	-0.529*** (0.147)	-0.151 (0.148)	-0.198* (0.118)
<i>doctors_bed</i>	0.235*** (0.061)	0.293*** (0.053)	0.124** (0.0559)	0.183*** (0.058)
<i>nurses_bed</i>	0.586*** (0.177)	0.523*** (0.166)	0.394*** (0.127)	0.319*** (0.106)
<i>salary</i>	0.514*** (0.148)	0.275* (0.163)	0.431*** (0.146)	0.197 (0.169)
<i>unemployment</i>	0.177*** (0.027)	0.178*** (0.030)	0.152*** (0.0227)	0.154*** (0.024)
<i>competition</i>	0.133 (0.160)	0.168 (0.174)	-0.0652 (0.167)	-0.016 (0.168)
<i>city</i>	0.205 (0.254)	0.174 (0.147)	0.236 (0.258)	0.212 (0.209)
<i>size_1</i>	0.00476 (0.250)	-0.0313 (0.135)	0.182 (0.273)	0.149 (0.195)
<i>size_3</i>	-0.301 (0.182)	-0.314 (0.193)	-0.214 (0.195)	-0.232 (0.169)
<i>teaching_status</i>	0.649 (0.547)	0.768** (0.324)	0.528 (0.569)	0.639 (0.468)
<i>constant</i>	-3.599 (2.616)	-0.748 (2.067)	-2.196 (2.593)	0.457 (2.466)
<i>No. of Hospitals</i>	409	410	409	410
<i>No. of Observations</i>	55	55	55	55
<i>F/Wald chi-sq test</i>	772.350	263.010	430.850	512.130
<i>(p-value)</i>	0.000	0.000	0.000	0.000
<i>Sargan-Hansen statistic</i>	5.312	5.526	4.791	3.988
<i>(p-value)</i>	0.379	0.3551	0.4419	0.5512

Notes: Standard errors in parentheses. Either cluster robust or bootstrapped standard errors reported (following the conservative principle defined in chapter 5).

\* $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

<sup>a</sup> Coefficients represent the differences of the financial performance of hospitals in the treatment group relative to performance in the control group after corporatization. Regression equation in log-log form.

Table B.9: Corporatization Effect in 2006 &amp; 2007

<i>Hausman-Taylor Estimation Results</i>				
<i>Variables/Model</i>	<i>rev_days</i>	<i>cost_days</i>	<i>rev_inpat</i>	<i>cost_inpat</i>
<i>CORP</i>	-0.188 (0.233)	-0.182 (0.167)	-0.286 (0.246)	-0.262 (0.206)
<i>POST</i>	0.270*** (0.047)	0.295*** (0.037)	0.257*** (0.033)	0.285*** (0.031)
<i>CORP</i> × <i>POST</i> <sup>a</sup>	0.036 (0.165)	0.071 (0.161)	0.097 (0.130)	0.133 (0.179)
<i>beds_utilization</i>	-0.356 (0.220)	-0.401** (0.184)	-0.008 (0.143)	-0.050 (0.158)
<i>doctors_bed</i>	0.117 (0.112)	0.169 (0.105)	-0.008 (0.085)	0.040 (0.088)
<i>nurses_bed</i>	0.516** (0.229)	0.423** (0.178)	0.317** (0.143)	0.215* (0.116)
<i>salary</i>	0.537*** (0.182)	0.249 (0.193)	0.305* (0.168)	0.027 (0.163)
<i>unemployment</i>	0.145*** (0.025)	0.157*** (0.031)	0.131*** (0.022)	0.143*** (0.027)
<i>competition</i>	-0.185 (0.195)	-0.125 (0.221)	-0.329* (0.185)	-0.234 (0.185)
<i>city</i>	0.391 (0.323)	0.354* (0.197)	0.415 (0.356)	0.344 (0.262)
<i>size_1</i>	0.142 (0.307)	0.106 (0.205)	0.308 (0.334)	0.249 (0.266)
<i>size_3</i>	-0.285 (0.200)	-0.331* (0.180)	-0.216 (0.238)	-0.259 (0.240)
<i>teaching_status</i>	0.305 (0.669)	0.522 (0.427)	0.345 (0.759)	0.619 (0.541)
<i>constant</i>	-5.617 (3.468)	-2.387 (2.816)	-3.039 (3.451)	0.326 (2.811)
<i>No. of Hospitals</i>	50	50	50	50
<i>No. of Observations</i>	316	317	316	317
<i>F/Wald chi-sq test</i>	550.450	631.380	539.020	529.260
<i>(p-value)</i>	0.000	0.000	0.000	0.000
<i>Sargan-Hansen statistic</i>	2.601	3.819	3.416	3.977
<i>(p-value)</i>	0.7613	0.5758	0.6362	0.5527

Notes: Standard errors in parentheses. Either cluster robust or bootstrapped standard errors reported (following the conservative principle defined in chapter 5).

\* $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

<sup>a</sup> Coefficients represent the differences of the financial performance of hospitals in the treatment group relative to performance in the control group after corporatization.

Regression equation in log-log form.

Table B.10: Permanency of the Corporatization Effect in 2003 &amp; 2004

*Hausman-Taylor Estimation Results*

<i>Variables/Model</i>	<i>rev_days</i>	<i>cost_days</i>	<i>rev_inpat</i>	<i>cost_inpat</i>
<i>CORP</i>	-0.193**	-0.190**	-0.187*	-0.177*
	0.091	0.092	0.106	0.100
<i>POST</i>	0.179***	0.147***	0.090**	0.057
	0.044	0.046	0.041	0.042
<i>CORP</i> × <i>POST</i> <sup>a</sup>	0.189***	0.218***	0.069	0.098**
	0.044	0.042	0.045	0.043
<i>TEMP</i>	-0.124**	-0.124**	-0.095*	-0.095*
	0.058	0.053	0.055	0.051
<i>beds_utilization</i>	-0.747***	-0.768***	-0.362**	-0.382**
	0.196	0.192	0.168	0.165
<i>doctors_bed</i>	0.236***	0.240***	0.164**	0.169**
	0.067	0.067	0.076	0.074
<i>nurses_bed</i>	0.868***	0.864***	0.591***	0.590***
	0.129	0.143	0.112	0.126
<i>salary</i>	0.714***	0.750***	0.745***	0.779***
	0.186	0.171	0.181	0.165
<i>unemployment</i>	0.111***	0.101***	0.099***	0.088***
	0.025	0.026	0.024	0.025
<i>competition</i>	-0.0185	0.112	-0.110	0.021
	0.213	0.200	0.194	0.182
<i>city</i>	0.143	0.082	0.115	0.069
	0.122	0.117	0.117	0.115
<i>size_1</i>	-0.0975	-0.141	-0.050	-0.081***
	0.101	0.093	0.107	0.102
<i>size_3</i>	-0.257	-0.236	-0.264	-0.243
	0.195	0.186	0.207	0.191
<i>teaching_status</i>	0.457	0.505	0.558*	0.579*
	0.335	0.336	0.332	0.337
<i>constant</i>	-2.948*	-2.863*	-2.494	-2.555
	1.706	1.630	1.766	1.621
<i>No. of Hospitals</i>	51	51	51	51
<i>No. of Observations</i>	362	362	362	362
<i>F/Wald chi-sq test</i>	229.260	208.860	1014.660	1064.370
<i>(p-value)</i>	0.000	0.000	0.000	0.000
<i>Sargan_Hansen statistic</i>	4.227	3.915	4.798	4.534
<i>(p-value)</i>	0.517	0.561	0.441	0.475

Notes: Standard errors in parentheses. Either cluster robust or bootstrapped standard errors reported (following the conservative principle defined in chapter 5). \* $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . <sup>a</sup> Coefficients represent the differences of financial performance of hospitals in the treatment group relative to performance in the control group after corporatization. Regression equation in log-log form.

Table B.11: Permanency of the Corporatization Effect in 2005

*Hausman-Taylor Estimation Results*

<i>Variables/Model</i>	<i>rev_days</i>	<i>cost_days</i>	<i>rev_inpat</i>	<i>cost_inpat</i>
<i>CORP</i>	0.271*** 0.005	0.221** 0.086	0.090 0.121	0.046 0.090
<i>POST</i>	0.234*** 0.000	0.242*** 0.033	0.184*** 0.032	0.194*** 0.032
<i>CORP</i> × <i>POST</i> <sup>a</sup>	-0.119** 0.011	-0.067* 0.035	-0.083 0.068	-0.031 0.042
<i>TEMP</i>	0.026 0.619	0.019 0.054	0.021 0.054	0.011 0.056
<i>beds_utilization</i>	-0.483*** 0.006	-0.533*** 0.147	-0.155 0.144	-0.200 0.125
<i>doctors_bed</i>	0.244*** 0.000	0.300*** 0.056	0.131** 0.059	0.187*** 0.056
<i>nurses_bed</i>	0.593*** 0.003	0.528*** 0.170	0.399*** 0.129	0.322*** 0.107
<i>salary</i>	0.515*** 0.001	0.276 0.164	0.432*** 0.155	0.197 0.170
<i>unemployment</i>	0.182*** 0.000	0.181*** 0.028	0.156*** 0.021	0.156*** 0.026
<i>competition</i>	0.110 0.544	0.152 0.183	-0.083 0.176	-0.025 0.159
<i>city</i>	0.212 0.170	0.177 0.142	0.238 0.254	0.211 0.136
<i>size_1</i>	0.011 0.941	-0.028 0.131	0.184 0.248	0.149 0.127
<i>size_3</i>	-0.300 0.109	-0.313 0.194	-0.215 0.176	-0.233 0.200
<i>teaching_status</i>	0.638* 0.063	0.762** 0.313	0.529 0.495	0.644** 0.275
<i>constant</i>	-3.581* 0.054	-0.721 2.031	-2.149 2.195	0.504 1.806
<i>No. of Hospitals</i>	409	410	409	410
<i>No. of Observations</i>	55	55	55	55
<i>F/Wald chi-sq test</i>	247.700	249.280	516.930	1400.950
( <i>p-value</i> )	0.000	0.000	0.000	0.000
<i>Sargan_Hansen statistic</i>	5.312	5.526	4.791	3.988
( <i>p-value</i> )	0.379	0.355	0.442	0.551

Notes: Standard errors in parentheses. Either cluster robust or bootstrapped standard errors reported (following the conservative principle defined in chapter 5). \* $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . <sup>a</sup> Coefficients represent the differences of financial performance of hospitals in the treatment group relative to performance in the control group after corporatization. Regression equation in log-log form.

Table B.12: Permanency of the Corporatization Effect in 2006 &amp; 2007

*Hausman-Taylor Estimation Results*

<i>Variables/Model</i>	<i>rev_days</i>	<i>cost_days</i>	<i>rev_inpat</i>	<i>cost_inpat</i>
<i>CORP</i>	-0.186	-0.180	-0.285	-0.261
	0.187	(0.148)	(0.217)	(0.185)
<i>POST</i>	0.270***	0.295***	0.257***	0.285***
	0.045	(0.039)	(0.037)	(0.029)
<i>CORP</i> × <i>POST</i> <sup>a</sup>	0.054	0.084	0.108	0.140
	0.178	(0.177)	(0.142)	(0.156)
<i>TEMP</i>	-0.034	-0.026	-0.022	-0.014
	0.042	(0.039)	(0.042)	(0.042)
<i>beds_utilization</i>	-0.352	-0.398**	-0.005	-0.048
	0.235	(0.200)	(0.165)	(0.143)
<i>doctors_bed</i>	0.115	0.168*	-0.010	0.039
	0.103	(0.010)	(0.082)	(0.087)
<i>nurses_bed</i>	0.517**	0.424**	0.318**	0.215*
	0.228	(0.185)	(0.139)	(0.113)
<i>salary</i>	0.545***	0.255	0.311*	0.0302
	0.165	(0.163)	(0.168)	(0.175)
<i>unemployment</i>	0.144***	0.156***	0.130***	0.142***
	0.022	(0.031)	(0.019)	(0.028)
<i>competition</i>	-0.176	-0.118	-0.323*	-0.230
	0.193	(0.202)	(0.169)	(0.184)
<i>city</i>	0.382	0.347*	0.410	0.340
	0.248	(0.196)	(0.356)	(0.243)
<i>size_1</i>	0.135	0.101	0.304	0.247
	0.266	(0.214)	(0.331)	(0.230)
<i>size_3</i>	-0.280	-0.328	-0.213	-0.257
	0.181	(0.215)	(0.238)	(0.230)
<i>teaching_status</i>	0.310	0.525	0.347	0.622
	0.570	(0.406)	(0.762)	(0.465)
<i>constant</i>	-5.642**	-2.407	-3.066	0.310
	2.723	(2.731)	(3.196)	(2.611)
<i>No. of Hospitals</i>	50	50	50	50
<i>No. of Observations</i>	316	317	316	317
<i>F/Wald chi-sq test</i>	630.850	601.770	646.640	578.400
<i>(p-value)</i>	0.000	0.000	0.000	0.000
<i>Sargan_Hansen statistic</i>	2.780	3.934	3.510	4.005
<i>(p-value)</i>	0.836	0.686	0.743	0.676

Notes: Standard errors in parentheses. Either cluster robust or bootstrapped standard errors reported (following the conservative principle defined in chapter 5). \* $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . <sup>a</sup> Coefficients represent the differences of financial performance of hospitals in the treatment group relative to performance in the control group after corporatization. Regression equation in log-log form.

# **Appendix C**

## **Content of Enclosed CD**

There is a CD enclosed to this thesis which contains:

- $\text{\LaTeX}$  source code and `.pdf` version of this thesis.
- Stata source code of the empirical part of this thesis.
- Sample of the dataset used in the analysis in `xls` format.