

Supplementary information

ASSESSMENT OF TFP IN EUROPEAN AND AMERICAN HIGHER EDUCATION INSTITUTIONS – APPLICATION OF MALMQUIST INDICES

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Table R1. The determinants of TFP growth – dependent variable Malmquist indices based on DEA model 2 (Malm2; inputs: total revenue, academic staff, outputs: publications, graduates) and DEA model 3 (Malm3; inputs: total revenue, academic staff, administration staff, total students, outputs: articles, publications other than articles, graduates)

A. Common frontier

	Europe		US	
	Malm2	Malm3	Malm2	Malm3
	(1)	(2)	(3)	(4)
$\text{Ln}(\text{Stud})_{i,t}$	-0.063***	-0.022	0.208	0.003
	[0.019]	[0.021]	[0.220]	[0.024]
$\text{Ln}(\text{GDPpc})_{n,t}$	0.074***	0.089***	-0.096**	-0.183***
	[0.018]	[0.019]	[0.041]	[0.037]
$\text{Rev_Gov}_{i,t}$	-0.109***	-0.099**	0.099***	0.072***
	[0.042]	[0.042]	[0.030]	[0.027]
N	2873	2873	1517	1517

B. European/US frontier

	Europe		US	
	Malm2	Malm3	Malm2	Malm3
	(1)	(2)	(3)	(4)
$\text{Ln}(\text{Stud})_{i,t}$	-0.035**	0.004	0.107	0.007
	[0.017]	[0.018]	[0.270]	[0.023]
$\text{Ln}(\text{GDPpc})_{n,t}$	0.003	0.036**	0.026	-0.047
	[0.015]	[0.016]	[0.043]	[0.035]
$\text{Rev_Gov}_{i,t}$	-0.036	-0.072*	0.060*	0.045*
	[0.037]	[0.037]	[0.036]	[0.025]
N	2873	2873	1517	1517

Notes: Estimations performed using General Least Squares (GLS), with a full set of institution and time dummies. Standard errors are adjusted for heteroskedasticity.

Source: own elaboration.

Table R2. The determinants of TFP growth – size of the unit measured by total staff, dependent variable Malmquist indices based on DEA model 1 (inputs: total revenue, academic staff, total students; outputs: publications, graduates)

	Common frontier		European/US frontier	
	Europe	US	Europe	US
	(1)	(2)	(3)	(4)
$\text{Ln}(\text{Staff})_{i,t}$	-0.014**	-0.085***	-0.016	-0.004
	[0.051]	[0.018]	[0.061]	[0.015]
$\text{Ln}(\text{GDPpc})_{n,t}$	0.100***	-0.153***	0.034**	-0.044
	[0.020]	[0.035]	[0.017]	[0.035]
$\text{Rev_Gov}_{i,t}$	-0.197***	0.045*	-0.126***	0.034
	[0.044]	[0.024]	[0.037]	[0.024]
N	2586	1493	2586	1493

Notes: Estimations performed using General Least Squares (GLS), with a full set of institution and time dummies. Standard errors are adjusted for heteroskedasticity.

Source: own elaboration.

Table R3. The determinants of TFP growth – lagged government revenues, dependent variable Malmquist indices based on DEA model 1 (inputs: total revenue, academic staff, total students; outputs: publications, graduates)

	Common frontier		European/US frontier	
	Europe	US	Europe	US
	(1)	(2)	(3)	(4)
$\text{Ln}(\text{Stud})_{i,t}$	-0.067***	-0.017	-0.045**	0.003
	[0.021]	[0.022]	[0.019]	[0.022]
$\text{Ln}(\text{GDPpc})_{n,t}$	0.046**	-0.188***	0.011	-0.057*
	[0.019]	[0.035]	[0.016]	[0.034]
$\text{Rev_Gov}_{i,t}$	-0.106**	0.002**	-0.103***	0.004
	[0.041]	[0.001]	[0.036]	[0.024]
N	2779	1517	2779	1517

Notes: Estimations performed using General Least Squares (GLS), with a full set of institution and time dummies. Standard errors are adjusted for heteroskedasticity.

Source: own elaboration.

Table R4. The determinants of efficiency (DEA scores)

A. Common frontier

	Europe				US	
	(1)	(2)	(3)	(4)	(5)	(6)
$\text{Ln}(\text{Stud})_{i,t}$	-0.045**	-0.052***	-0.053**	-0.051**	-0.016	0.001
	[0.018]	[0.018]	[0.021]	[0.020]	[0.021]	[0.023]
$\text{Ln}(\text{GDPpc})_{n,t}$		0.088***	0.057***		-0.189***	-0.178***
		[0.015]	[0.018]		[0.034]	[0.035]
$\text{Rev_Gov}_{i,t}$			-0.139***			0.057**
			[0.042]			[0.025]
N	3371	3371	2873	1520	1520	1517

B. European/US frontier

	Europe				US	
	(1)	(2)	(3)	(4)	(5)	(6)
$\text{Ln}(\text{Stud})_{i,t}$	-0.023	-0.026*	-0.034*	-0.007	0.004	0.014
	[0.016]	[0.016]	[0.019]	[0.020]	[0.021]	[0.022]
$\text{Ln}(\text{GDPpc})_{n,t}$		0.027**	0.016		-0.060*	-0.05
		[0.013]	[0.016]		[0.034]	[0.034]
$\text{Rev_Gov}_{i,t}$			-0.088**			0.042*
			[0.036]			[0.024]
N	3371	3371	2873	1520	1520	1517

Notes: Estimations performed using General Least Squares (GLS), with a full set of institution and time dummies. Standard errors are adjusted for heteroskedasticity.

Source: own elaboration.