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The efficiency of economics departments reconsidered

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Abstract

Employing data envelopment analysis and the free disposal hull approach, we evaluate the efficiency of 206 economics departments around the world. We use one input, full-time equivalents, and ten outputs which were both downloaded from RePEc website. By averaging over 1023 efficiency scores, obtained from all possible input-output combinations, we rank the economics departments. Furthermore, we provide some evidence that efficiency is not well correlated with reputation which is measured by the institutional ranking in RePEc.

JEL Code: I21; I23; J45

Keywords: efficiency; economics departments; data envelopment analysis; free disposal hull; RePEc

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1 Introduction

There is a large literature that examines the efficiency of (higher) education institutions, see Worthington (2001) for a survey. The most often used approach within the frontier efficiency measurement is the data envelopment analysis (DEA) and variations thereof. With respect to economics departments there are only a few studies investigating their productivity or efficiency. Johnes and Johnes (1992, 1993, 1995) conduct a DEA for 36 British economics departments. Conroy, Dusansky, and Kildegaard (1995), Cherchye and Abeele (2005) and Perianes-Rodríguez and Ruiz-Castillo (2014) use other input-output measures not belonging to frontier efficiency class. Macri and Sinha (2006) provide an overview of international rankings, which are partly based on productivity considerations.

This paper provides the most comprehensive efficiency analysis of economics departments around the world so far. We use data for 206 economics departments from RePEc. As the only input variable we have full-time equivalents for authors affiliated with the respective department. Furthermore we have ten output variables, which represent both quantity (or scientific output as published work) and quality (or scientific impact as number of citations) bibliometric information. Efficiency scores are calculated using the standard and popular data envelopment analysis (DEA). Furthermore, we report results for the lesser employed free disposal hull approach (FDH). Many previous studies on efficiency of higher education institutions are driven by the availability of input and output indicators. Furthermore, they often only provide one score, which is calculated using all inputs and outputs simultaneously. We circumvent or reduce the problem of a potential omitted variable or selection bias by considering all 1023 input-output combinations for each department. Based on this we obtain an average efficiency score. Furthermore, the RePEc data is by construction less prone to measurement error, which is a serious problem in non-parametric frontier efficiency analysis. The idea to use various combinations of given inputs and outputs goes back to Johnes and Johnes (1993). Instead of investigating variation across efficiency scores we take them as given to calculate an average efficiency measure.

2 Data and empirical approach

Our data is taken from the Research Papers in Economics (RePEc) website and refers to February 2015. We consider one input: author shares, according to the share the authors set by themselves in RePEc.¹ In case of no self-setting, RePEc calculates a share based on the affiliated members of the listed institutions, see Zimmermann (2013) for details.

Based on the information of bibliometric items and registered authors, RePEc provides more than 30 rankings, which could potentially serve as output indicators. However, Seiler and Wohlrabe (2012) or Zimmermann (2013) show that there is a high correlation between some of them, indicating a high degree of similarity. For this reason we have chosen ten output indicators which consider the arguments from the literature and represent from our point of view the bibliometric impact of a faculty. The outputs are given by: Distinct number of works (overall and weighted by simple and by recursive impact factor), citations (overall and weighted by simple and by recursive impact factor), number of citing authors who are registered with RePEc and the number of journal pages (overall and weighted by simple and by recursive impact factor). The latter one represents publications in economics journals. For details of each rankings see Zimmermann (2013).

The nature of the data refers to the stock approach, i.e. a publication is assigned to the current affiliation of a researcher (only a share in case of multiple affiliations). In contrast to this, one could adopt the flow approach where work is credited to the institution that the author was affiliated with at the time of publication. Although, the flow approach is preferable to the stock one it cannot be realized with the RePEc data.

Given the input and output indicators, we downloaded the corresponding publicly available rankings from the RePEc website. In these rankings only the top 5% institutions are shown. We selected all faculties that were listed in all ten rankings. We excluded all economic research institutions (e.g. Ifo institute), central banks and networks (e.g. NBER). We only include economics departments, to make the results comparable across units. Some are sub-identities of larger organizations. Finally, we end up with 206 institutions. We standardize the data by

¹If author A identifies himself with 50% as an affiliate of institution A and with 50% of institution B, then both institutions will increase their input by 0.5.

dividing each indicator by its mean.

The RePEc data is homogenous and consistent across faculties for two reasons. First, authors can give weights to their affiliations (if they have more than one). This eliminates any arbitrary weighting that would have to be applied if an outsider performed this task. This way, we have full-time equivalents for each faculty. Second, RePEc allows for authors to manage their publication and citation list. Thus, the result is a consistent data set which even enables international comparisons. Furthermore it reduces the measurement error, which is a critical point in the non-parametric efficiency analysis.

In order to obtain efficiency scores for each institution we estimate a educational production frontier non-parametrically. We employ the standard data envelopment analysis introduced by Charnes, Cooper, and Rhodes (1978). We opt for the input efficiency measures and assume constant returns to scale. See Cooper, Seiford, and Zhu (2004) for a comprehensive discussion of DEA. The most serious disadvantage is that the DEA is extremely vulnerable to outliers and measurement error. Therefore, we additionally employ the free disposal hull approach (FDH) which is a little bit less prone to outliers. The FDH approach was introduced by Deprins, Simar, and Tulkens (1984). Both DEA and FDH are non-stochastic methods in that they assume all deviations from the frontier are the result of inefficiency. See Tauchmann (2012) for an illustrative example of both approaches.

3 Results

Given one input and ten outputs we conduct both the DEA and FDH for each input-output combination. We start with one input and one output and increase the latter up to ten. This gives us 1023 efficiency scores for both approaches. In Table 1 we show the results for all departments. The results are sorted by the best average DEA score. Additionally to the average we report the best and the worst score. With the FDH approach potentially more institutions are located on the educational production frontier. As a consequence the all institutions are closer to this line. We find this in our example as all average FDH efficiency scores are higher compared to their DEA counterparts. The correlation between the DEA and

the FDH average scores is with 0.95 (Spearman rank correlation: 0.97) quite high. Thus, the findings does not change substantially if we employ a different approach to measure efficiency. Generally, the overall results are very similar.

With respect to average DEA scores, the *Economics Department of Harvard* and the *Tepper School of Business Administration at the Carnegie Mellon University* are the most efficient institutions in our sample. For all input-output-combinations, both exhibit no inefficiencies as all scores are equal to one. This argument is only valid with the chosen sample, i.e. an overall efficiency statement could only be made if *all* economics departments could be included in the analysis. The first ten institutions are located in the U.S. In the top 20 there are only three non-U.S. economics departments. The ranking does not show, as might be expected, that the top-ranked departments in terms of reputation are also top-ranked with respect to efficiency. To support this point we added the ranking position from the institutional world-wide ranking in RePEc as of February 2015.² The Spearman rank correlation between the DEA ranking and the RePEc ranking is given by 0.165 (FDH: 0.341). Thus, efficiency is not well correlated with reputation.

4 Summary

In this note we investigated the efficiency of 206 economics departments from all over the world. With data from RePEc we calculated 1023 different efficiency scores using the DEA and FDH approach based on one input and ten output indicators. Both techniques yield similar results. We show that efficiency is not always a good predictor of reputation measured by rankings.

There is one potential caveat. A critical aspect of our data set is the fact that RePEc only reports the data for authors who registered with RePEc and the work is only assigned to an institution if the author set it as his affiliation. Even if the author shares reported on RePEc are only a part of the actual author shares for an institution, the outputs are also only

²There is one faculty missing – Economics Dept, Queens University – which was not listed in the aggregated ranking based on 31 rankings.

reported for the registered authors. Maybe a bias can arise if only the “productive” authors register. Nevertheless, we think that our analysis can give a useful impression of the efficiency in economics institutions. Future research could take look at the relationship of reputation (e.g. rankings) and efficiency.

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Table 1: Rankings and efficiency scores based on DEA and FDH for 206 economics departments

Department	DEA Efficiency Scores				FDH Efficiency Scores				RePEc
	Rank	Average	Min	Max	Rank	Average	Min	Max	
Dept of Economics, Harvard University	1	1.000	1.000	1.000	1	1.000	1.000	1.000	1
Dept of Economics, Tepper Sch. of Business Administration, Carnegie Mellon University	1	1.000	1.000	1.000	1	1.000	1.000	1.000	126
Economics Dept, Massachusetts Institute of Technology (MIT)	3	0.962	0.852	1.000	5	1.000	0.997	1.000	5
Sch. of International and Public Affairs (SIPA), Columbia University	4	0.950	0.859	1.000	1	1.000	1.000	1.000	83
Dept of Economics, Princeton University	5	0.926	0.829	1.000	1	1.000	1.000	1.000	8
Dept of Economics, Johns Hopkins University	6	0.913	0.865	0.948	11	0.987	0.911	1.000	91
Warrington College of Business, University of Florida	7	0.893	0.885	1.000	15	0.932	0.885	1.000	136
Finance and Economics Dept, Graduate Sch. of Business, Columbia University	8	0.889	0.760	0.951	7	1.000	0.792	1.000	29
Dept of Economics, University of California-Berkeley	9	0.866	0.777	1.000	14	0.937	0.933	1.000	9
Dept of Economics, Bar Ilan University	10	0.821	0.821	0.826	26	0.821	0.821	0.927	286
Eitan Berglas Sch. of Economics, Tel Aviv University	11	0.819	0.750	0.890	16	0.924	0.799	1.000	78
Tepper Sch. of Business Administration, Carnegie Mellon University	12	0.806	0.788	0.822	19	0.913	0.844	0.927	107
Dept of Economics, Maxwell Sch., Syracuse University	13	0.759	0.759	0.805	35	0.759	0.759	0.927	186
Innocenzo Gasparini Institute for Economic Research (IGIER), Universita Commerciale Luigi Bocconi	14	0.759	0.702	0.831	8	0.998	0.749	1.000	69
Dept of Economics, Tufts University	15	0.733	0.733	0.743	39	0.733	0.733	0.896	238
Dept of Economics, University of Minnesota	16	0.716	0.610	0.751	10	0.989	0.658	0.993	64
Dept of Economics, University of Washington	17	0.713	0.676	0.810	25	0.824	0.676	1.000	119
Dept of Agricultural and Resource Economics, University of California-Berkeley	18	0.704	0.684	1.000	33	0.766	0.684	1.000	153
Sch. of Management, Yale University	19	0.692	0.635	0.743	18	0.917	0.652	1.000	95
Institut dEconomie Industrielle (IDEI), Toulouse Sch. of Economics (TSE)	20	0.691	0.612	0.888	17	0.920	0.814	1.000	62
Anderson Graduate Sch. of Management, University of California-Los Angeles (UCLA)	21	0.688	0.596	0.817	23	0.841	0.666	1.000	42
Institut dAnalisi Economica CSIC (IAE-CSIC), Barcelona Graduate Sch. of Economics (Barcelona GSE)	22	0.684	0.684	0.684	47	0.684	0.684	0.684	245
Economics Dept, Dartmouth College	23	0.677	0.582	0.708	27	0.815	0.645	1.000	46
Dept of Economics, University of Chicago	24	0.674	0.536	0.728	24	0.832	0.825	0.832	10
Graduate Sch. of Business, Columbia University	25	0.657	0.558	0.720	6	1.000	0.962	1.000	22
Economics Dept, Yale University	26	0.645	0.562	0.765	9	0.992	0.657	1.000	18
Economics Dept, University of Wisconsin-Madison	27	0.644	0.573	0.681	30	0.803	0.636	1.000	43
Kennedy Sch. of Government, Harvard University	28	0.642	0.545	0.753	13	0.967	0.634	0.973	17
Booth Sch. of Business, University of Chicago	29	0.642	0.439	0.709	21	0.851	0.658	1.000	6

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Table 1 – cont. from previous page.

Department	DEA Efficiency Scores			FDH Efficiency Scores			RePEc		
	Rank	Average	Min	Max	Rank	Average		Min	Max
Dept of Geography and Environment, London Sch. of Economics (LSE)	30	0.639	0.639	0.646	54	0.640	0.639	0.722	238
Saïd Business Sch., Oxford University	31	0.639	0.637	0.693	52	0.647	0.637	0.779	157
Graduate Sch. of Business, Stanford University	32	0.633	0.496	0.681	34	0.763	0.506	0.763	34
Economic Science Institute (ESI), Argyros Sch. of Business and Economics, Chapman University	33	0.629	0.629	0.652	57	0.630	0.629	0.769	197
Economics Dept, University of Missouri	34	0.619	0.619	0.619	59	0.619	0.619	0.619	230
Dept of Economics, Cornell University	35	0.617	0.536	0.778	28	0.808	0.714	1.000	50
Dept of Economics, University of Pennsylvania	36	0.614	0.559	0.699	12	0.973	0.676	1.019	29
Dept of Economics, Hebrew University of Jerusalem	37	0.614	0.582	0.697	45	0.704	0.582	1.000	144
Dept of Economics, New York University (NYU)	38	0.612	0.525	0.670	31	0.803	0.796	0.803	13
Economics Dept, Stern Sch. of Business, New York University (NYU)	39	0.607	0.541	0.702	20	0.875	0.542	0.886	67
Sloan Sch. of Management, Massachusetts Institute of Technology (MIT)	40	0.596	0.505	0.652	37	0.739	0.586	0.739	32
Centre for Economic Performance (CEP), London Sch. of Economics (LSE)	41	0.594	0.533	0.685	38	0.736	0.619	0.934	78
Dept of Economics, Northwestern University	42	0.591	0.473	0.629	43	0.712	0.553	1.000	37
Economics Dept, University of California-Santa Cruz (UCSC)	43	0.591	0.571	0.710	49	0.678	0.571	0.835	126
Dept of Economics, University of Southern California	44	0.590	0.515	0.663	36	0.758	0.610	0.921	101
Dept of Economics, Sch. of Arts and Sciences, Columbia University	45	0.589	0.516	0.670	29	0.807	0.807	0.807	14
Dept of Economics, Washington University in St. Louis	46	0.579	0.540	0.647	48	0.680	0.611	0.922	102
Dept of Economics, University of California-Santa Barbara (UCSB)	47	0.577	0.532	0.621	32	0.780	0.588	0.887	79
Harvard Business Sch., Harvard University	48	0.577	0.470	0.605	44	0.707	0.560	0.707	40
Dept of Economics, University of California-Riverside	49	0.567	0.567	0.589	67	0.568	0.567	0.694	257
Dept of Economics, Pennsylvania State University	50	0.559	0.513	0.606	60	0.616	0.607	0.916	103
John E. Walker Dept of Economics, Clemson University	51	0.554	0.554	0.630	68	0.556	0.554	0.677	207
Walter A. Haas Sch. of Business, University of California-Berkeley	52	0.545	0.442	0.665	22	0.849	0.600	0.921	27
Warwick Business Sch., University of Warwick	53	0.538	0.538	0.583	71	0.539	0.538	0.658	225
Sch. of Economics, University College Dublin	54	0.536	0.536	0.569	73	0.537	0.536	0.656	259
HEC Montreal (Ecole des Hautes Etudes Commerciales)	55	0.528	0.528	0.609	75	0.529	0.528	0.646	251
Dept of Agricultural and Resource Economics, University of Maryland	56	0.524	0.524	0.603	78	0.525	0.524	0.640	199
Dept of Economics, University of California-San Diego (UCSD)	57	0.520	0.437	0.576	55	0.635	0.503	0.636	33
Dept of Economics, Stanford University	58	0.518	0.470	0.563	41	0.718	0.712	0.718	12
Dept of Economics, University of California-Los Angeles (UCLA)	59	0.516	0.456	0.563	56	0.630	0.497	0.928	39
Dept Volkswirtschaftslehre, Universität Bern	60	0.515	0.515	0.543	81	0.515	0.515	0.629	253
Dept of Economics, Indiana University	61	0.513	0.500	0.597	64	0.591	0.500	0.731	129
Vancouver Sch. of Economics, University of British Columbia	62	0.511	0.416	0.733	51	0.650	0.635	0.975	44
Kellogg Graduate Sch. of Management, Northwestern University	63	0.502	0.451	0.529	46	0.688	0.456	0.688	57

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Table 1 – cont. from previous page.

Department	DEA Efficiency Scores			FDH Efficiency Scores			RePEc		
	Rank	Average	Min	Max	Rank	Average		Min	Max
Charles H. Dyson Sch. of Applied Economics and Management, Cornell University	64	0.497	0.488	0.779	79	0.525	0.488	1.000	169
Dept of Economics, McGill University	65	0.494	0.493	0.560	83	0.496	0.493	0.603	209
Faculty of Economics, University of Tokyo	66	0.488	0.487	0.592	84	0.490	0.487	0.595	184
Dept of Economics, Vanderbilt University	67	0.470	0.384	0.740	53	0.640	0.457	1.000	73
Dept of Economics, Boston University	68	0.468	0.427	0.535	40	0.732	0.731	0.738	25
Dept of Economics, University of California-Irvine	69	0.468	0.411	0.611	72	0.539	0.501	0.756	92
Argyros Sch. of Business and Economics, Chapman University	70	0.466	0.465	0.528	88	0.469	0.465	0.569	178
London Business Sch. (LBS)	71	0.455	0.433	0.496	76	0.528	0.433	0.537	112
Dept of Economics, University of Illinois at Urbana-Champaign	72	0.454	0.454	0.499	92	0.456	0.454	0.555	179
Dept of Economics, Duke University	73	0.452	0.385	0.514	58	0.620	0.475	0.621	56
Departament d'Economia i Historia Econòmica, Universitat Autònoma de Barcelona, Barcelona Graduate Sch. of Economics (Barcelona GSE)	74	0.450	0.450	0.485	93	0.450	0.450	0.550	232
Economics Dept, Georgetown University	75	0.449	0.394	0.547	62	0.614	0.487	0.615	59
Stern Sch. of Business, New York University (NYU)	76	0.449	0.370	0.499	50	0.657	0.653	0.658	16
Economics Dept, Brown University	77	0.447	0.394	0.492	42	0.713	0.474	0.722	20
Economics Dept, University of California-Davis	78	0.447	0.390	0.583	61	0.615	0.408	0.893	58
Dept of Economics, University of Colorado	79	0.445	0.443	0.512	89	0.466	0.443	0.647	142
Dept of Econometrics and Business Statistics, Monash Business Sch., Monash University	80	0.444	0.443	0.591	94	0.448	0.443	0.648	210
Economics Dept, George Mason University	81	0.436	0.436	0.549	97	0.437	0.436	0.637	256
Dept of Economics, Ohio State University	82	0.433	0.382	0.575	82	0.503	0.382	0.705	84
Sch. of Economics, Singapore Management University	83	0.431	0.431	0.444	99	0.431	0.431	0.527	245
Economics Dept, London Sch. of Economics (LSE)	84	0.430	0.378	0.469	69	0.549	0.435	0.550	44
Dept of Economics, Rutgers University-New Brunswick	85	0.429	0.365	0.564	70	0.540	0.444	0.670	88
Dept of Economics, University of Maryland	86	0.424	0.392	0.475	63	0.592	0.469	0.593	62
Collegio Carlo Alberto, Università degli Studi di Torino	87	0.424	0.424	0.444	100	0.424	0.424	0.518	319
Business Sch., Imperial College	88	0.413	0.413	0.436	102	0.413	0.413	0.505	240
Dept of Economics, W.P. Carey Sch. of Business, Arizona State University	89	0.412	0.379	0.474	86	0.472	0.438	0.660	101
Dept of Economics, University of Virginia	90	0.410	0.372	0.482	90	0.464	0.439	0.662	96
Economics Dept, University of Strathclyde	91	0.409	0.409	0.465	103	0.410	0.409	0.500	272
Rotman Sch. of Management, University of Toronto	92	0.408	0.397	0.469	87	0.472	0.397	0.580	119
Nationalekonomiska institutionen, Stockholms Universitet	93	0.403	0.403	0.406	106	0.403	0.403	0.456	227
Dept of Economics, Florida State University	94	0.401	0.401	0.439	108	0.402	0.401	0.491	278
Dept of Economics, Sciences économiques, Sciences Po	95	0.383	0.368	0.443	96	0.442	0.368	0.450	125

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Table 1 – cont. from previous page.

Department	DEA Efficiency Scores			FDH Efficiency Scores			RePEc		
	Rank	Average	Min	Max	Rank	Average		Min	Max
Dept of Economics, University of Texas-Austin	96	0.382	0.371	0.412	95	0.443	0.371	0.454	123
Dept of Economics, Boston College	97	0.381	0.332	0.467	74	0.529	0.354	0.593	51
Center for Operations Research and Econometrics (CORE), Ecole des Sciences Economiques de Louvain, Universite Catholique de Louvain	98	0.380	0.320	0.749	85	0.477	0.320	0.908	97
Sch. of Economics, Finance and Management, University of Bristol	99	0.375	0.375	0.376	111	0.375	0.375	0.424	239
Cass Business Sch., City University	100	0.374	0.370	0.459	107	0.402	0.370	0.541	149
Economics Dept, University of Michigan	101	0.374	0.326	0.466	65	0.586	0.402	0.617	26
Departement dEconomie, Ecole Polytechnique	102	0.373	0.373	0.430	113	0.373	0.373	0.456	268
Economics Dept, Michigan State University	103	0.369	0.318	0.443	80	0.522	0.405	0.528	61
Singapore Management University	104	0.364	0.364	0.385	115	0.364	0.364	0.445	229
Wharton Sch. of Business, University of Pennsylvania	105	0.363	0.322	0.459	66	0.571	0.571	0.581	23
Research Sch. of Economics, College of Business and Economics, Australian National University	106	0.363	0.362	0.450	114	0.365	0.362	0.529	231
Dept of Economics, University College London (UCL)	107	0.359	0.303	0.473	77	0.527	0.396	0.608	30
Dept of Economics, University of Western Ontario	108	0.353	0.302	0.482	98	0.435	0.302	0.557	90
Melbourne Institute of Applied Economic and Social Research (MIAESR), Faculty of Business and Economics, University of Melbourne	109	0.352	0.351	0.482	116	0.357	0.351	0.513	228
Dept of Economics, University of Calgary	110	0.350	0.349	0.430	118	0.352	0.349	0.511	218
Sch. of Economics and Finance, Queen Mary	111	0.347	0.347	0.360	119	0.347	0.347	0.424	205
Dept of Economics, McMaster University	112	0.346	0.344	0.435	117	0.353	0.344	0.503	177
W.P. Carey Sch. of Business, Arizona State University	113	0.344	0.310	0.417	91	0.463	0.350	0.528	85
Wirtschafts- und Sozialwissenschaftliche Fakultät, Universität zu Köln	114	0.343	0.343	0.350	122	0.343	0.343	0.419	248
Dipartimento di Scienze Economiche "Marco Fanno", Universita degli Studi di Padova	115	0.339	0.339	0.374	124	0.339	0.339	0.415	302
Centrum voor Economische Studien, Faculteit Economie en Bedrijfswetenschappen, KU Leuven	116	0.333	0.332	0.401	126	0.334	0.332	0.406	181
Dept of Economics, Iowa State University	117	0.333	0.296	0.863	110	0.393	0.296	0.899	109
International Economics Section, The Graduate Institute of International and Development Studies	118	0.332	0.331	0.380	125	0.338	0.331	0.405	143
Dept of Economics, Simon Fraser University	119	0.329	0.315	0.438	112	0.374	0.315	0.581	127
Dept of Economics, Sch. of Business, Management and Economics, University of Sussex	120	0.326	0.325	0.404	127	0.327	0.325	0.476	184
Economics Dept, Queens University	121	0.324	0.267	0.515	101	0.423	0.267	0.752	
Wirtschaftswissenschaftlicher Fachbereich, Rheinische Friedrich-Wilhelms-Universität Bonn	122	0.323	0.323	0.353	128	0.324	0.323	0.395	161

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Table 1 – cont. from previous page.

Department	DEA Efficiency Scores			FDH Efficiency Scores			RePEc		
	Rank	Average	Min	Max	Rank	Average		Min	Max
Dept of Economics, University of Warwick	123	0.313	0.252	0.474	104	0.409	0.359	0.623	49
Handelshögskolan i Stockholm	124	0.312	0.288	0.340	121	0.344	0.344	0.398	104
Tinbergen Instituut	125	0.310	0.299	0.470	123	0.342	0.299	0.552	150
Groupe de Recherche en Economie Mathematique et Quantitative (GREMAQ), Toulouse Sch. of Economics (TSE)	126	0.308	0.308	0.354	136	0.308	0.308	0.376	236
Sch. of Economics, University of Kent	127	0.306	0.305	0.378	139	0.306	0.305	0.446	235
Dept of Economics, National University of Singapore	128	0.304	0.304	0.358	137	0.307	0.304	0.444	234
College of Business and Economics, Australian National University	129	0.304	0.303	0.391	138	0.307	0.303	0.443	222
Okonomisk institutt, Universitetet i Oslo	130	0.303	0.286	0.403	120	0.347	0.286	0.527	114
Dept of Economics, Faculty of Business and Economics, University of Melbourne	131	0.303	0.299	0.448	135	0.312	0.299	0.613	188
Fachbereich Wirtschaftswissenschaften, Universität Konstanz	132	0.302	0.302	0.303	142	0.302	0.302	0.341	224
Sch. of Economics, University of Manchester	133	0.300	0.296	0.400	133	0.316	0.296	0.432	152
Faculte des Hautes Etudes Commerciales (HEC), Universite de Lausanne	134	0.298	0.298	0.337	144	0.299	0.298	0.365	187
Dept of Economics, Management Sch., Lancaster University	135	0.297	0.296	0.413	143	0.299	0.296	0.433	238
Dept of Economics, George Washington University	136	0.296	0.293	0.361	131	0.317	0.293	0.428	135
Dept of Economics, Carleton University	137	0.295	0.294	0.364	147	0.296	0.294	0.430	233
Economics Dept, University of Essex	138	0.295	0.290	0.351	130	0.319	0.290	0.423	140
Faculty of Economics, University of Cambridge	139	0.294	0.246	0.448	105	0.408	0.276	0.628	63
Sch. of Economics and Management, Universiteit van Tilburg	140	0.294	0.284	0.501	129	0.320	0.284	0.761	148
Facultad de Economia y Negocios, Universidad de Chile	141	0.292	0.292	0.384	148	0.295	0.292	0.426	221
Dept of Economics, Adam Smith Business Sch., University of Glasgow	142	0.292	0.292	0.358	151	0.293	0.292	0.427	223
Sch. of Economics, UNSW Business Sch., UNSW (Australia)	143	0.290	0.287	0.386	145	0.298	0.287	0.420	172
Dept of Economics, University of Toronto	144	0.287	0.242	0.388	109	0.394	0.278	0.457	70
Facultad de Ciencia Economicas y Administrativas, Pontificia Universidad Catolica de Chile	145	0.286	0.285	0.379	155	0.286	0.285	0.417	254
Faculte de droit, deconomie et de finance, Universite du Luxembourg	146	0.285	0.285	0.327	156	0.285	0.285	0.348	262
Dept of Economics, Andrew Young Sch. of Policy Studies, Georgia State Uni- versity	147	0.281	0.270	0.426	132	0.316	0.270	0.497	125
Fakultät für Wirtschaftswissenschaften, Universität Wien	148	0.274	0.272	0.357	157	0.280	0.272	0.398	172
Volkswirtschaftliche Fakultät, Ludwig-Maximilians-Universität München	149	0.270	0.268	0.344	154	0.286	0.268	0.391	121
Andrew Young Sch. of Policy Studies, Georgia State University	150	0.267	0.251	0.426	140	0.303	0.251	0.502	117
Nationalekonomiska Institutionen, Uppsala Universitet	151	0.265	0.265	0.297	164	0.266	0.265	0.324	192
Abteilung für Volkswirtschaftslehre, Universität Mannheim	152	0.264	0.258	0.326	153	0.291	0.258	0.378	139
Okonomisk Institut, Kobenhavns Universitet	153	0.261	0.251	0.303	150	0.294	0.251	0.306	111

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Table 1 – cont. from previous page.

Department	DEA Efficiency Scores			FDH Efficiency Scores			RePEc		
	Rank	Average	Min	Max	Rank	Average		Min	Max
European Centre for Advanced Research in Economics and Statistics (ECARES), Solvay Brussels Sch. of Economics and Management, Universite Libre de Bruxelles	154	0.258	0.230	0.424	146	0.297	0.260	0.646	103
Adam Smith Business Sch., University of Glasgow	155	0.254	0.254	0.312	170	0.255	0.254	0.371	228
Faculteit Economie en Bedrijfskunde, Universiteit van Amsterdam	156	0.254	0.221	0.405	141	0.302	0.221	0.593	100
Sch. of Economics and Political Science, Universität St. Gallen	157	0.253	0.252	0.329	169	0.257	0.252	0.368	159
Sch. of Economics, Faculty of Arts and Social Sciences, University of Sydney	158	0.244	0.244	0.267	173	0.244	0.244	0.298	176
Management Sch., Lancaster University	159	0.239	0.237	0.355	174	0.243	0.237	0.437	216
Nationalekonomiska institutionen, Handelshögskolan, Göteborgs Universitet	160	0.238	0.238	0.309	175	0.239	0.238	0.347	208
Faculteit Economie en Bedrijfskunde, Rijksuniversiteit Groningen	161	0.233	0.218	0.499	165	0.261	0.218	0.618	110
Departamento de Economia, Universidad Carlos III de Madrid	162	0.232	0.224	0.298	167	0.260	0.224	0.331	141
Sch. of Economics, University of Nottingham	163	0.230	0.193	0.386	152	0.293	0.193	0.543	80
Dept of Economics, Oxford University	164	0.226	0.165	0.619	158	0.279	0.268	1.000	11
Dept of Economics, Monash Business Sch., Monash University	165	0.225	0.203	0.445	166	0.261	0.203	0.574	103
Institut für Volkswirtschaftslehre, Wirtschaftswissenschaftliche Fakultät, Universität Zürich	166	0.225	0.198	0.266	134	0.316	0.219	0.330	67
Central University of Finance and Economics (CUFE)	167	0.222	0.222	0.233	183	0.222	0.222	0.271	181
Ecole des Sciences Economiques de Louvain, Universite Catholique de Louvain	168	0.220	0.164	0.562	149	0.294	0.164	0.764	55
Departament dEconomia i Empresa, Universitat Pompeu Fabra, Barcelona Graduate Sch. of Economics (Barcelona GSE)	169	0.217	0.192	0.262	172	0.246	0.192	0.353	97
Cheung Kong Graduate Sch. of Business	170	0.217	0.216	0.264	186	0.219	0.216	0.316	189
Copenhagen Business Sch.	171	0.215	0.214	0.287	187	0.219	0.214	0.313	175
Sch. of Business, Management and Economics, University of Sussex	172	0.211	0.206	0.349	181	0.224	0.206	0.551	122
Fachbereich Wirtschaftswissenschaft, Goethe Universität Frankfurt am Main	173	0.210	0.210	0.245	188	0.212	0.210	0.257	163
Sciences économiques, Sciences Po	174	0.210	0.166	0.605	161	0.275	0.166	0.773	67
Athens University of Economics and Business (AUEB)	175	0.210	0.205	0.356	182	0.223	0.205	0.549	174
CentER for Economic Research, Universiteit van Tilburg	176	0.207	0.169	0.538	162	0.268	0.169	0.786	76
Wirtschaftswissenschaftliche Fakultät, Humboldt-Universität Berlin	177	0.206	0.206	0.235	193	0.206	0.206	0.252	263
Handelshögskolan, Göteborgs Universitet	178	0.205	0.205	0.277	191	0.207	0.205	0.299	194
Faculteit der Economische Wetenschappen en Bedrijfskunde, Vrije Universiteit	179	0.204	0.172	0.551	171	0.255	0.172	0.799	81
Faculteit der Economische Wetenschappen, Erasmus Universiteit Rotterdam	180	0.203	0.187	0.360	178	0.232	0.187	0.527	116
Norges Handelshoyskole (NHH)	181	0.196	0.193	0.279	190	0.207	0.193	0.356	164
Sch. of Economics, University of Queensland	182	0.196	0.170	0.537	176	0.237	0.170	0.791	75
Dept of Economics and Related Studies, University of York	183	0.194	0.168	0.360	177	0.236	0.168	0.475	89
Paris Sch. of Economics	184	0.193	0.125	1.000	163	0.267	0.174	1.000	15

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Table 1 – cont. from previous page.

Department	DEA Efficiency Scores			FDH Efficiency Scores			RePEc		
	Rank	Average	Min	Max	Rank	Average		Min	Max
Institut for Okonomi, Aarhus Universitet	185	0.191	0.154	0.356	168	0.259	0.184	0.427	65
Toulouse Sch. of Economics (TSE)	186	0.190	0.141	0.471	159	0.277	0.184	1.000	21
UNSW Business Sch., UNSW (Australia)	187	0.189	0.169	0.316	184	0.221	0.169	0.453	106
Nationalekonomiska Institutionen, Ekonomihögskolan, Lunds Universitet	188	0.188	0.188	0.228	198	0.189	0.188	0.230	208
Groupement de Recherche en Economie Quantitative dAix-Marseille (GRE-QAM), Aix-Marseille Sch. of Economics (AMSE)	189	0.185	0.157	0.393	179	0.229	0.157	0.446	91
Barcelona Graduate Sch. of Economics (Barcelona GSE)	190	0.183	0.148	0.349	160	0.276	0.193	0.488	24
Sch. of Business and Economics, Maastricht University	191	0.181	0.165	0.371	189	0.208	0.165	0.468	115
Faculty of Business and Economics, University of Melbourne	192	0.178	0.146	0.465	180	0.229	0.146	0.679	82
Faculteit Economie en Bedrijfswetenschappen, KU Leuven	193	0.178	0.159	0.350	192	0.207	0.159	0.451	93
Business Sch., University of Technology Sydney	194	0.177	0.171	0.312	197	0.194	0.171	0.480	151
London Sch. of Economics (LSE)	195	0.175	0.123	1.000	185	0.220	0.185	1.000	7
Crawford Sch. of Public Policy, Australian National University	196	0.169	0.146	0.520	196	0.204	0.146	0.681	66
Dipartimento di Scienze Economiche, Alma Mater Studiorum - Universita di Bologna	197	0.166	0.158	0.319	200	0.184	0.158	0.444	137
Aix-Marseille Sch. of Economics (AMSE)	198	0.163	0.135	0.369	195	0.206	0.135	0.411	86
Wirtschaftswissenschaftliche Fakultät, Universität Zürich	199	0.158	0.130	0.269	194	0.206	0.181	0.315	45
Ekonomihögskolan, Lunds Universitet	200	0.150	0.150	0.193	203	0.151	0.150	0.219	190
Monash Business Sch., Monash University	201	0.141	0.095	0.599	199	0.187	0.095	1.000	36
Facolta di Economia, Universita degli Studi di Roma "Tor Vergata"	202	0.141	0.136	0.254	202	0.152	0.136	0.364	138
Universite Paris-Dauphine (Paris IX)	203	0.138	0.137	0.300	204	0.142	0.137	0.387	231
Solvay Brussels Sch. of Economics and Management, Universite Libre de Bruxelles	204	0.133	0.103	0.552	201	0.178	0.121	1.000	53
Centre dEconomie de la Sorbonne, Universite Paris 1 (Pantheon-Sorbonne)	205	0.114	0.111	0.244	205	0.120	0.111	0.315	160
National Research University Higher Sch. of Economics	206	0.044	0.043	0.098	206	0.048	0.043	0.120	146

Notes: This table reports the average efficiency scores (plus its minimum and maximum) with the corresponding ranks both for the data envelopment analysis (DEA) and the free disposal hull (FDH) approach. The names refer to the official listing on the RePEc website. Abbreviations are added by the authors. *RePEc* refers to the world-wide institutional ranking from RePEc as of February 2015.