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Differences between health care systems and the single European health care market*

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Abstract

The following paper analyses the possibilities of forming a single European health care market. This aim is achieved by studying the impact of the differing organisational features of individual European health care systems on the efficiency of health care provision, by examining the relationship between the inputs used to produce health care services and the population's health status in the analysed countries and by exploring the link between the quantity of health care services and the health status. The authors hypothesise that the efficiency and organisation of health care systems determine the possibilities of forming an efficient single European health care market. The empirical methodology employed in this paper is data envelopment analysis (DEA). The results show that differences between health care systems and in the ownership types of health care providers are not so large as to prevent the formation of a single European health care market. However, the formation of a single European health care market would reveal the characteristics of health care systems in such a way that citizens would be in favour of the public sector in health care and the national health service model.

Key words: *health care systems, single European market, efficiency*

JEL Classification: *H40, I11*

1. Introduction

This paper analyses the possibilities of forming a single European health care market by taking into consideration differences in the organisation and efficiency of Euro-

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pean health care systems. In doing so, the authors hypothesise that the formation of a single European health care market could lead to competition not only between health care providers from different countries but also between different health care systems. The relative competitive position of a particular health care system would thus depend on both its ability to efficiently transform inputs into health care services and the impact of the latter on the population's health status. Great differences in the relative competitive positions of individual countries and their health care systems would hinder the normal operation of a single European health care market. Namely, the expected response to differing abilities to efficiently transform inputs into health care services is greater patient and staff mobility and, consequently, the threat of liquidation of some major national players involved in the provision of health care. Further, the formation of a single European health care market would contribute to the increased transparency and comparability of European health care systems. This would result in patients' improved awareness of the relationship between the inputs used to produce health care services and their own health status.

The ability to transform inputs into health care services is an issue of the efficiency of health care provision. With the aim of recognising the possibilities of forming a single European health care market this paper seeks to identify differences in the efficiency of health care provision and the impact of the differing organisational features of individual health care systems on this efficiency. The question of efficiency in health care provision is studied empirically by employing data envelopment analysis (DEA). The calculated efficiency scores are then used to analyse the effect of the different organisational features of health care systems on efficiency.

As mentioned, the formation of a single European health care market is also conditional on the relationship between the inputs used to produce health care services and the population's health status. Health status has several determinants and the quantity of health care services must thus be viewed as only one of the many inputs that contribute to good health (Feldstein, 2002: 18-19). The quantity of health care services is determined by the quantity of inputs used to supply them and thus by the efficiency of their providers. But we can further hypothesise that a link exists between the quantity of health care services and the health status, and that the different organisational features of the analysed health care systems also affect this relationship. The latter is further explored in this paper with the help of DEA.

2. Types of health care systems

European health care systems are diverse and a study of international experiences in providing health care is interesting for two chief reasons. First, in light of the overwhelming increase in health care costs that is attributed to factors such as cost-increasing technology, ageing of the population, supplier-induced demand, increas-

ing health care prices and inefficiency (Vitaliano, Toren, 1994: 282) most countries are reforming their health care systems. When looking at cross-country differences in health care expenditures it is therefore important to keep in mind that high expenditures can be a result of the high average level of services, yet they can also be a consequence of the high resource costs of services or their inefficient provision (Folland, Goodman, Stano, 2000: 518-519). Countries face an important dilemma: to which system should they move closest. Understanding the approaches used by other countries can provide important clues for assessing a country's own system (Folland, Goodman, Stano, 2000: 515). Second, the significance of the issue of health care systems' heterogeneity within the EU is further highlighted by the prospect of an open, European-wide, health care market. Namely, this issue poses administrative burdens regarding access to cross-border care and risks creating confusion among patients, health care providers and payers (Palm, Nickless, 2001: 13-14). Differences between health care systems can therefore have important implications for the formation of a single health care market in the EU.

Health care systems can be differentiated according to two key features. The first is the predominant ownership form of health care providers, while the second is the predominant source of health care financing. The prevailing source of financing can be taxes (the United Kingdom, Denmark, Finland, Greece, Iceland, Ireland, Norway, Portugal, Spain, Sweden), social insurance (Austria, Belgium, France, Germany, Japan, Luxembourg), a combination of taxes and social insurance (Italy), a combination of private sources and social insurance (Canada, the Netherlands) or private sources (the USA, Switzerland) (Kornai, Eggleston, 2001: 102-3). From the ownership point of view, providers can be predominantly public (the United Kingdom, Denmark, Finland, Greece, Iceland, Ireland, Norway, Portugal, Spain, Sweden, Italy), private (Canada, the USA, Switzerland, the Netherlands) or a combination of the two (Austria, Belgium, France, Germany, Japan, Luxembourg, Slovenia) (Kornai, Eggleston, 2001: 102). In this paper this typology of ownership forms is used for the purpose of studying how differences in health care systems in the EU impact on the efficiency of health care provision and the process of transforming health care to health.

In light of this diversity, it is useful to try to introduce a typology of health care systems that differentiates between the national health service, the national health insurance, the social insurance, the mixed system, the Singapore, and the Soviet models (Kornai, Eggleston, 2001: 108-11; Gordon, 1988: 204). For EU countries any one of the national health service model, national health insurance model or social insurance model is characteristic.

Since the United Kingdom is a prime example of the national health service model, this approach is also referred to as the British model. It combines state-owned health care providers with state budget financing. The government acts as both the purchaser of services and the owner and manager of health care organisations. Provider and purchaser roles are therefore integrated. Universal and equal access to basic health

care services is one of the main attributes of this model. Other countries that may be listed within this category are Denmark, Greece, Italy, Czech Republic, Hungary and Poland.

The national health insurance model is also known as the Canadian model. This approach also emphasises universal and equal access to almost all standard health care services but it separates the purchaser and provider roles. Namely, health care providers are privately-owned but the provision of a national health insurance standard benefit package is publicly financed. In this case, insurer and sponsor functions are integrated into a regional (provincial) single-payer institution. Hospitals are paid negotiated budgets with a total budget cap for all provincial hospitals established by governmental authority. Physicians are also paid on the basis of fees negotiated between the government and medical societies. However, physicians generally function as independent firms. This strong governmental regulatory control over prices implies there is virtually no role for markets to set health care prices. Fee controls and capacity constraints on the provision of care have been successful in limiting cost increases over time. On the other hand, the adoption of new technologies has seen a notably slower pace in Canada compared to the USA. Finland, Norway, Spain and Sweden also fall into this group (Kornai, Eggleston, 2001: 109; Phelps, 2003: 558-560).

The social insurance model was first developed in Germany. That is why it is also known as the German or Bismarckian[3] model. It is otherwise referred to as traditional sickness insurance. Initially, sickness funds hired physicians directly. Gradually, physicians were separated into 'panels' that negotiated with the sickness funds to provide care for patients. Today, the sickness funds operate as non-profit entities and the membership of workers and their dependants is compulsory and involves the free choice of a specific fund[4]. Both workers and employers contribute to these funds. The link between sickness fund and providers, both public and private, is formalised. Public financing is therefore combined with contracting between purchaser(s) and providers. The insurance role is decentralised, the package of services guaranteed is standardised, and patients have a free choice of providers. Other countries that can be listed in this category are Austria, Belgium, France and the Netherlands (Kornai, Eggleston, 2001: 109-110; Phelps, 2003: 561-562).

Figure 1 summarises the typology of public health care systems in the EU. Palm and Nickless (2001), however, do not differentiate between the national health service and national health insurance models. They classify these two types of systems as either a centralised or a decentralised national health service. In addition, they differ-

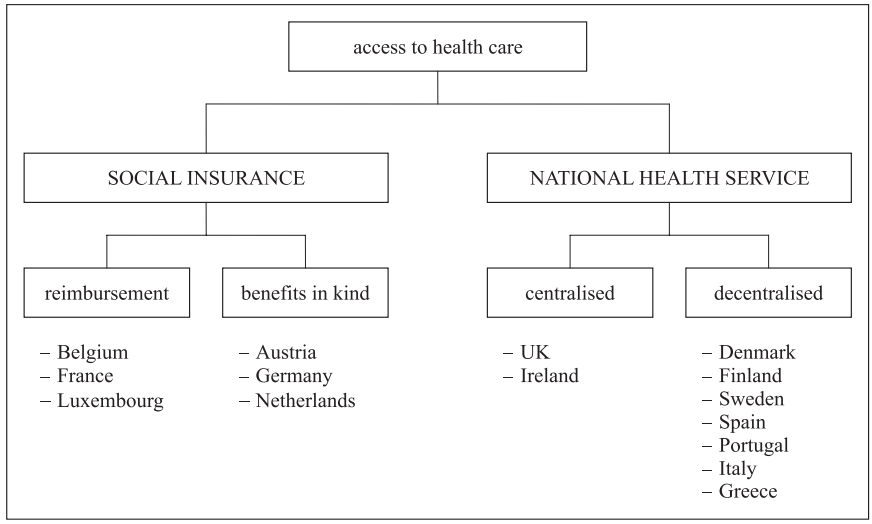
[3] German Chancellor Otto von Bismarck's government established a spectrum of social insurance for workers and partly their dependants in 1880.

[4] In practice, the selection of a specific fund depends on one's occupation and geographical region.

entiate between social insurance that provides benefits in kind and social insurance systems based on reimbursement.

In this paper this typology is also used for the purpose of studying how differences in health care systems in the EU impact on the provision of health care services and the process of transforming health care to health.

Figure 1: Typology of public health care systems in the EU



Source: Palm, Nickless, 2001: 14

3. Methodology

The empirical analysis in this paper employs data envelopment analysis (DEA). DEA is a linear programming method that can be employed to measure efficiency. It was developed by Charnes, Cooper and Rhodes (1978), based on earlier work by Farrell (1957). DEA examines the relationship between inputs to the analysed process and the outputs of that process (Jacobs, 2001: 103). It is usually employed to study the efficiency of individual health care providers. However, it can also be used to compare inputs and outputs for other units of analysis. This implies it can be used in this paper to study both the relationship between the inputs used to produce health care services and the relationship between inputs, health care and the population's health status characteristic of different EU countries.

In economics, producers or service suppliers are considered inefficient when with given inputs they fail to achieve the maximum possible level of production. This describes the case of technical inefficiency. With DEA two measures of technical efficiency can be considered: the input measure of efficiency and the output measure of efficiency (Griffiths, Wall, 2000: 144, 184). The former refers to the proportion of actual input that would be sufficient to produce a given output if the quantity of input were minimal. If the calculated technical efficiency score for one unit of analysis is 0.75 then its technical inefficiency is 25%. This means that the analysed unit, if it were more efficient, could produce its output with the amount of inputs reduced by 25%. The output measure of efficiency refers to the proportion of potential output that is actually achieved by a given level of input.

Allocative inefficiency emerges when the goods produced and inputs employed are not allocated appropriately given their prices. Namely, a particular level of production can be achieved with different combinations of inputs but the allocative efficiency is only achieved by employing the inputs in the proportion that enables production at the minimum average cost. Allocative inefficiency therefore arises when inputs are employed in the wrong proportion, given their prices and productivity at the margin. Technical and allocative efficiency are the two components of cost efficiency (Björkgren, Häkkinen, Linna, 2000: 193).

Compared to other methods for assessing efficiency, DEA has the advantage of being non-parametric and requiring minimal assumptions about the production frontier. In addition, it is able to manage complex production environments with multiple inputs and outputs. DEA, however, does have the disadvantage of assuming no statistical noise and, being a non-statistical method, it lacks the diagnostic tools with which to judge the goodness-of-fit of the model specifications (Jacobs, 2001: 104). DEA efficiency estimates are derived from comparing the input-output levels of an individual studied unit with those of a subset of efficient peers. Such efficiency estimates can thus prove highly sensitive to data swings at the level of the individual units studied.

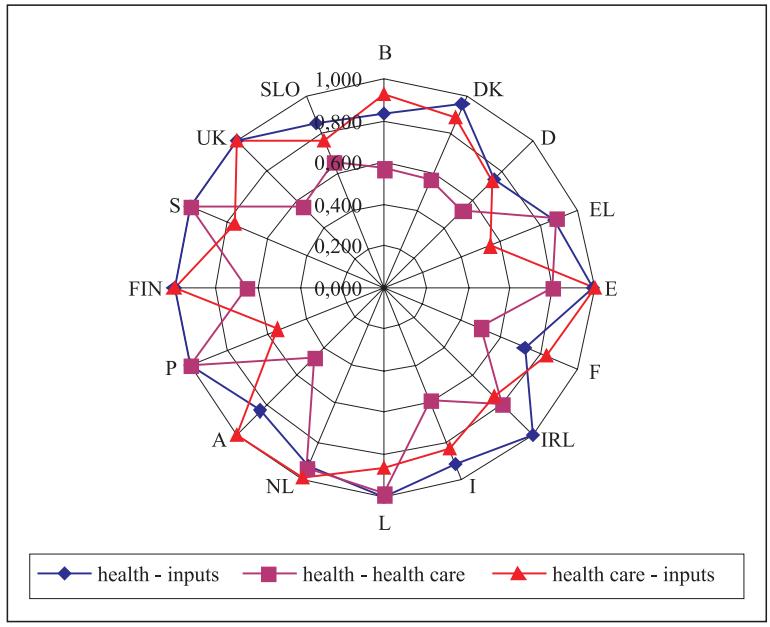
In this paper DEA is used to determine the level of technical efficiency. Cost efficiency is not analysed due to the unavailability of comparable price data.

4. Data and results

The following analysis uses data for 16 countries. Due to problems with data unavailability and unreliability, only old EU members and Slovenia are included in the empirical study. Data in the following analysis come from three sources. For old EU members data is provided by the Eurostat and the OECD. For Slovenia it is available from the Institute of Public Health.

Three variables indicating the populations' health status are included in the analysis. These include mortality and life expectancy at birth for both males and females. Two variables, i.e. number of discharges per 100,000 inhabitants and number of doctor consultations per capita, are included to indicate the output of the health care sector. The number of practicing physicians per 100,000 inhabitants, the number of hospital beds per 100,000 inhabitants and total expenditures as a percentage of GDP are, on the other hand, inputs used to produce the health care sector's output. All these variables are shown in more detail in Table 1 in the Appendix. The DEA scores are shown in Table 2 in the Appendix and their comparison for the countries analysed in this paper is clearly depicted in Figure 2.

Figure 2: Comparison of DEA scores



Source: the authors

Country abbreviations: B – Belgium, DK – Denmark, D – Germany, EL – Greece, E – Spain, F – France, IRL – Ireland, I – Italy, L – Luxembourg, NL – Netherlands, A – Austria, P – Portugal, FIN – Finland, S – Sweden, UK – United Kingdom

DEA was first employed to calculate the efficiency of health care providers of the analysed countries. Inputs used in the first step of the analysis are the number of practicing physicians per 100,000 inhabitants, the number of hospital beds per 100,000 inhabitants and total expenditures as a percentage of GDP. Outputs used include the number of discharges per 100,000 inhabitants and the number of doctor consultations per capita. As shown in the second column of Table 2 in the Appendix the

calculated mean efficiency score is 0.839 and the countries that are efficient peers are the UK, Finland, Austria and Spain. The efficiency score of Slovenia is 0.759 and, compared to all other analysed countries, it takes ninth place. For Slovenia to move towards the efficient health care provision frontier a reduction in the number of physicians of 55 physicians per 100,000 inhabitants would be needed. It would also need 197 less hospital beds per 100,000 inhabitants. Total health expenditures amounting to 6.3% of GDP would in this case suffice for the provision of health care. However, the analysis reveals that the number of discharges per 100,000 inhabitants should increase by approximately 2,000 (see Table 3 in the Appendix).

As shown in Table 2 in the Appendix the analysed countries were divided into four groups according to the type of their health care system. The highest mean value of the calculated efficiency scores is characteristic of countries with social insurance providing benefits in kind. Groups that follow are countries with a centralised national health service and countries with social insurance based on reimbursement. The lowest mean value of calculated efficiency scores is characteristic of countries with a decentralised national health service. However, the analysis of variance shows that the mean values of calculated efficiency scores do not differ between these groups in a statistically significant way ($p=0.792$). Countries were also divided into groups according to the ownership form of health care providers. The highest mean value of calculated efficiency scores is characteristic of a country with the predominantly private ownership of providers and the lowest for countries with predominantly public ownership. The analysis of variance again shows that the mean values of the calculated efficiency scores do not differ between these groups in a statistically significant way ($p=0.562$).

In the next step DEA was employed to study the relationship between the provided health care services and the population's health status of the analysed countries. Inputs in this case include the number of discharges per 100,000 inhabitants and number of doctor consultations per capita. Output, on the other hand, is measured by mortality and life expectancy at birth for both males and females. In this case two countries, i.e. Portugal and Sweden, determine the frontier. Slovenia takes eighth place compared to all other analysed countries. Slovenia lags behind countries on the frontier by 35%. The analysed countries lag behind by 28% on average.

Again the countries were divided into four groups according to the type of their health care system. The highest mean value of calculated scores indicating the deviation from the frontier is characteristic of seven countries with a decentralised national health service. Mean values of the calculated scores for other groups are very similar. Again the analysis of variance shows that the mean values do not differ between these groups in a statistically significant way ($p=0.711$). The analysis also shows that a country in which providers are predominantly private has the highest mean value of calculated scores indicating a deviation from the frontier. The lowest

mean value is characteristic of countries with both public and private ownership. Differences between mean values are again insignificant (p=0.186).

In the last step DEA was employed to study the relationship between the inputs used to provide health care services and the population's health status in the analysed countries. The relationship between the number of practicing physicians per 100,000 inhabitants, the number of hospital beds per 100,000 inhabitants and total expenditures as a percentage of GDP on one hand, and mortality and life expectancy at birth for both males and females on the other, is therefore also studied. Four countries, i.e. Austria, Spain, Finland and the UK determine the frontier. Here, Slovenia takes ninth place compared to all other analysed countries. It lags behind the countries on the frontier by 24%, while all analysed countries lag behind by 16% on average.

The group of countries with a centralised national health service has the highest mean value of calculated scores and this group forms the frontier. Countries with a decentralised national health service follow. Other groups have lower mean values of calculated scores indicating a deviation from the frontier. Interestingly, the differences are statistically significant (p=0.05). Taking the ownership form into consideration the results show that those countries with predominantly public type ownership have the highest mean values of calculated scores indicating a deviation from the frontier. However, a country characterised with predominantly private ownership has a very similar mean value of calculated scores. Differences in the mean values between these groups are highly statistically significant (p=0.009).

5. Conclusions

1. The effect of the different organisational features of European health care systems and differences in the predominant ownership forms on the relationship between inputs and outputs of the health care sector is not statistically significant in this analysis. However, the calculated efficiency DEA scores allow us to hypothesise that health care provision is more efficient in countries where the private ownership of providers is predominant and where health care systems follow the social insurance model.

2. Countries with a decentralised national health service achieve the highest European standards of the population's health status relative to the quantity of health care services provided. This group of countries includes a country with the predominantly private ownership of providers, yet most countries in this group have the predominantly public ownership of providers.

3. The results show that the relationship between the inputs used to produce health care services and the population's health status is influenced by the general eco-

nomic and social characteristics of the studied countries. The authors believe that the statistically significant effect of the differences in types of health care systems and differences in types of ownership forms of health care providers on this relationship can only be understood if we believe that the general economic and social characteristics of the studied countries affect on one hand the choice of a particular health care system and on the other the population's health status. General economic and social characteristics of a particular country therefore determine both the selection of a certain type of health care system and the level of the population's health status.

Some countries with the best relationship between the inputs used and the population's health status are most efficient in transferring the inputs to the provided health care services. These countries maintain a high health status relative to the inputs used due to their efficient health care providers. Interestingly, providers in these countries are predominantly publicly owned and this is contrary to the first conclusion outlined above.

4. From the viewpoint of health care service provision on average the countries do not lag (by 17%) behind the most efficient peers as much as they lag (by 28%) when the relationship between the health status and the quantity of health care services provided is considered. Differences between health care systems are not so large as to have a significant affect on the efficiency of health care service provision and thus differences in this efficiency should not prevent the formation of a single European health care market. Differences in the ownership types of health care providers also pose no barrier to their international competition. However, the formation of a single European health care market would reveal the effect of the differing organisational features and ownership forms on the population's health status relative to the inputs used to provide health care services. From this viewpoint, citizens would be in favour of the public sector in health care and the national health service model.

5. When examining the relationships between the inputs and outputs of the health care sector, between health care services and the population's health status, and between inputs and the population's health status Slovenia takes the ninth, eighth and again eighth place, respectively. Slovenia lags most behind its efficient peers in its ability to efficiently transfer inputs to health care services. It is using its total health care expenditures inefficiently. Especially in the number of discharges Slovenia appears to lag behind compared to its more efficient peers.

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APPENDICES

Table 1: Input and output variables used in the DEA, 2000

Country	Death rate	Life expectancy at birth - female	Life expectancy at birth - male	Discharges per 100,000 inhabitants	Doctor consultations per capita	Practicing physicians per 100,000 inhabitants	Hospital beds per 100,000 inhabitants	Total health expenditures - % of GDP
	DEATH	LIFEEXPF	LIFEEXPM	DISCHARG[1]	CONSULT	DOCTOR	BEDS	EXPEND
B	10.3	80.8	74.6	15584	7.9	386	712	8.7
DK	10.9	79.3	74.5	17611	6.0	316[1]	430	8.3
D	10.9	80.7[1]	74.7[1]	19521	6.5	359	912	10.3[2]
EL	9.8	80.6[1]	75.5[1]	13507	3.6	448	488	8.3
E	9.1	82.7	75.5	11276	7.8	303	409	7.7
F	9.1	82.7	75.2	25699	6.5	329	820	9.5
IRL	8.2	79.2	74.2	12491	4.2	203	914	6.7
I	9.7	82.4	76.3	16106	6.0	600	466	8.1
L	8.6	81.3	74.9	20845	2.8	315	657	6.0[1]
NL	8.8	80.5	75.5	9618	5.7	192[1]	475	8.1
A	9.5	81.2	75.4	28093	6.5	309	699	8.0
P	10.6	79.7	72.7	8728	3.4	265	382	8.2
FIN	9.5	81.0	74.2	26755	4.2	310	754	6.6
S	10.5	82.0	77.4	16650	2.8	298	359	7.9[2]
UK	10.2	80.2	75.4	24594	5.4	180	408	7.3
SLO	9.3	79.6	72.1	16172	5.0	230	541	8.2

Sources: Health Statistics – Key Data on Health 2002 – Data 1970-2001
OECD at a Glance 2001
Health Statistics Yearbook 2001
Notes: 1 – 1999
2 – 1998

Table 2: Calculated scores

Country	TE Health care – Inputs	TE Health – Health care	TE Health – Inputs	Type of system	Ownership
B	0.937	0.575	0.836	1	2
DK	0.886	0.570	0.958	4	1
D	0.722	0.524	0.747	2	2
EL	0.541	0.890	0.873	4	1
E	1.000	0.804	0.992	4	1
F	0.839	0.492	0.728	1	2
IRL	0.741	0.798	1.000	3	1
I	0.833	0.589	0.919	4	1
L	0.869	0.991	1.000	1	2
NL	0.987	0.942	0.938	2	3
A	1.000	0.472	0.837	2	2
P	0.541	1.000	0.999	4	1
FIN	1.000	0.659	1.000	4	1
S	0.769	1.000	1.000	4	1
UK	1.000	0.557	1.000	3	1
SLO	0.759	0.647	0.858	1	2
mean	0.839	0.719	0.918	/	/

Notes:

Type of system:

1: social insurance - reimbursement

2: social insurance - benefits in kind

3: national health service - centralised

4: national heath service - decentralised

Predominant ownership form:

1: public

2: public and private

3: private

Source: the authors

Table 3: Difference between projected and original values of a health care sector's outputs and inputs

Variable	B	DK	D	EL	E	F	IRL	I
Discharges	0.00	0.00	0.000	0.000	0.000	0.000	586.528	0.000
Consultations	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000
Doctors	-66.53	-99.04	-99.830	-317.271	0.000	-52.949	-52.478	-372.861
Beds	-218.00	-48.92	-435.330	-223.996	0.000	-229.323	-641.668	-77.986
Expenditures	-0.55	-1.33	-2.864	-3.810	0.000	-1.529	-1.732	-1.356
Variable	L	NL	A	P	FIN	S	UK	SLO
Discharges	0.000	16342.333	0.000	0.000	0.000	0.000	0.000	2008.631
Consultations	0.562	0.000	0.000	0.000	0.000	0.856	0.000	0.000
Doctors	-79.598	-2.528	0.000	-139.798	0.000	-176.480	0.000	-55.518
Beds	-86.102	-44.333	0.000	-175.363	0.000	-82.786	0.000	-197.368
Expenditures	-0.786	-0.394	0.000	-4.396	0.000	-2.958	0.000	-1.979

Source: the authors

Table 4: Difference between projected and original values of health and a health care sector's outputs

Variable	B	DK	D	EL	E	F	IRL	I
Death	8.63	8.22	9.90	2.22	4.60	12.85	5.21	9.14
Life exp - f	61.51	65.17	76.57	11.17	20.27	85.26	22.21	59.46
Life exp - m	55.21	57.89	69.54	9.38	18.42	80.48	18.77	53.30
Discharges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consultations	-1.83	0.00	0.00	0.00	-3.41	0.00	0.00	0.00
Variable	L	NL	A	P	FIN	S	UK	SLO
Death	1.90	2.88	12.90	0.00	6.25	0.00	8.64	6.91
Life exp - f	0.70	7.33	90.90	0.00	42.00	0.00	64.94	43.38
Life exp - m	2.50	4.61	84.72	0.00	41.90	0.00	59.95	40.99
Discharges	-4195.00	0.00	0.00	0.00	-1780.00	0.00	0.00	0.00
Consultations	0.00	-1.95	0.00	0.00	0.00	0.00	0.00	0.00

Source: the authors

Table 5: Difference between projected and original values of health and a health care sector's inputs

Variable	B	DK	D	EL	E	F	IRL	I
Death	0.000	0.000	0.000	0.337	1.436	0.453	0.000	0.714
Life exp - f	3.276	6.184	8.375	0.000	0.000	0.000	0.000	0.000
Life exp - m	3.487	5.989	8.000	0.176	2.329	1.929	0.000	1.110
Doctors	-134.744	-79.637	-90.811	-258.601	-88.517	-89.500	0.000	-410.523
Beds	-116.700	-17.999	-276.009	-62.040	-3.212	-223.071	0.000	-37.563
Expenditures	-1.426	-0.347	-2.605	-1.055	-0.060	-2.584	0.000	-0.653
Variable	L	NL	A	P	FIN	S	UK	SLO
Death	0.000	1.438	0.000	0.000	0.000	0.000	0.000	0.494
Life exp - f	0.000	0.000	0.042	3.259	0.000	0.000	0.000	0.000
Life exp - m	0.000	0.182	0.000	5.506	0.000	0.000	0.000	2.518
Doctors	0.000	-11.829	-50.223	-0.138	0.000	0.000	0.000	-32.757
Beds	0.000	-65.474	-123.936	-0.198	0.000	0.000	0.000	-77.049
Expenditures	0.000	-0.773	-1.300	-0.347	0.000	0.000	0.000	-1.168

Source: the authors

Razlike između zdravstvenih sustava i jedinstveno europsko tržište zdravstvenih usluga

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Sažetak

U ovome radu istražuju se mogućnosti formiranja jedinstvenog europskog tržišta zdravstvenih usluga. Taj cilj ostvaruje se kroz analizu efikasnosti različitih europskih zdravstvenih sustava u odnosu na zdravstveno stanje populacije i inputa u produkciju zdravstvenih usluga te u odnosu na zdravstveno stanje populacije i opsega zdravstvenih usluga. Autori rada pretpostavljaju da mogućnost formiranja efikasnog jedinstvenog europskog tržišta zdravstvenih usluga zavisi od efikasnosti organizacije zdravstvenih sustava u Europi. U ovome radu autori koriste DEA metodologiju empiričkog istraživanja. Rezultati istraživanja pokazuju da razlike između zdravstvenih sustava i tipa vlasništva zdravstvenih institucija nisu tako velike da bi onemogućile formiranje jedinstvenog europskog tržišta zdravstvenih usluga. Unatoč tome, formiranje jedinstvenog europskog tržišta zdravstvenih usluga moralo bi pokazati kako je u prednosti stanovništvo onih europskih država, u kojima prevladavaju javne zdravstvene institucije i proračunsko financirano zdravstvo.

Ključne riječi: *zdravstveni sustavi, jedinstveno europsko tržište zdravstvenih usluga, efikasnost*

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