



národní
úložiště
šedé
literatury

Význam niektorých scientometrických kritérií pri tvorbe rozpočtu a kvalifikačnom raste na Univerzite Pavla Jozefa Šafárika v Košiciach, Slovenská republika

Černák, Juraj
2012

Dostupný z <http://www.nusl.cz/ntk/nusl-126585>

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Datum stažení: 24.04.2024

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The Role of Scientometric Criteria in the Formation of Budget and Qualification Growth at Pavol Jozef Šafárik University in Košice, the Slovak Republic

1 Prague, 5th October 2012

Pavol Jozef Šafárik University in Košice
Šrobárova 2, 041 80 Košice, www.upjs.sk



PAVOL JOZEF ŠAFÁRIK UNIVERSITY IN KOŠICE

Wisdom of the past, knowledge of the present, education of the future.



Outline

1. P. J. Šafárik University in Košice – basic information
2. State subsidy of public universities in Slovakia
3. Administration systems of publication output
4. Publication output and the state subsidy at UPJŠ
5. Publication output and citations in qualification growth of lecturers
6. Further activities in which the number and quality of publications and citations play an important role
7. Conclusions

1. Pavol Jozef Šafárik University in Košice – basic information

Universitas Cassoviensis ab anno 1657

- 1657 foundation of *Academia Cassoviensis*
- 1660 Golden Bull awarded by Leopold I
- 1959 Pavol Jozef Šafárik University in Košice (UPJŠ)
- 1997 university splitting into UPJŠ in Košice and University in Prešov

- **Faculties:** Faculty of Medicine (1949)
Faculty of Sciences (1963)
Faculty of Law (1973)
Faculty of Public Administration (1998)
Faculty of Arts (2007)



Pavol Jozef Šafárik
1793-1861





Slovakia (NUTS 1)

5.4 million inhabitants

40 universities:

20 public + 3 state + 13 privat + 4 foreign

region of eastern Slovakia (NUTS 2)

1.6 million inhabitants

Košice 235 000 inhabitants

Pavol Jozef Šafárik University in Košice:

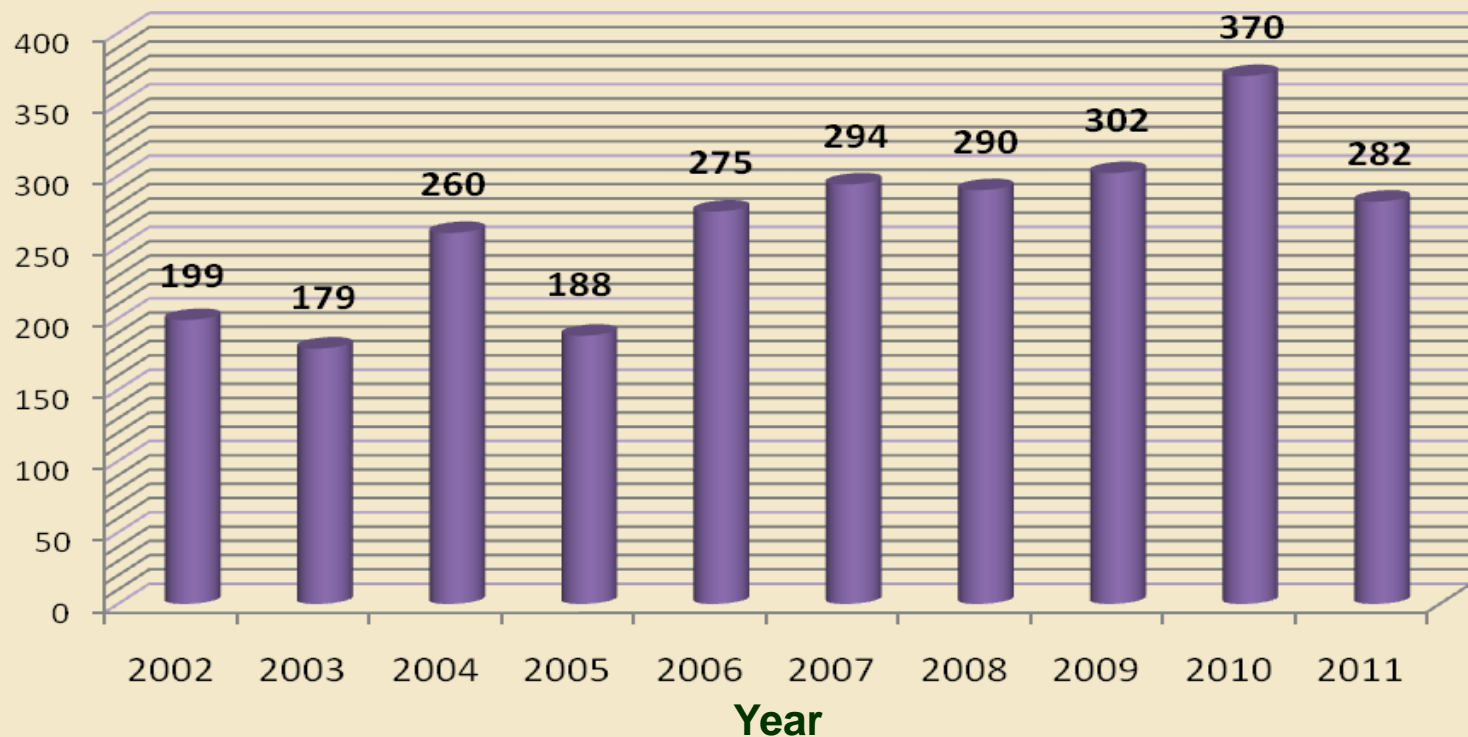
- **second classical public university in Slovakia**
- **more than 8,700 students (4.9 % of all public university students in Slovakia)**
- **900 graduates per year, mainly with MA (incl. M.D.) degree + 70 PhD. graduates**
- **1 300 employees; 700 university lecturers and research staff**
- **scientific character: mainly basic research, more than 300 research papers registered in WoK per year (8 % of 20 Slovak public universities)**

Number of publications by UPJŠ in WoK database (27. 4. 2012)

Number of publications originating from Slovakia: **3,512** (2010: **3,641**);

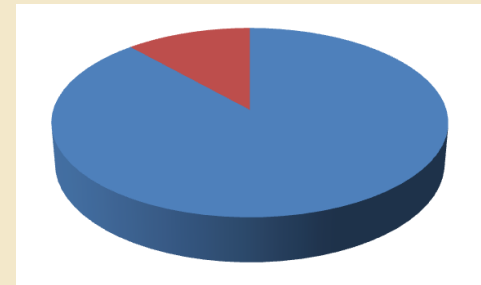
Publications originating from UPJŠ represent **8.0 %** (2011);

UPJŠ students out of the total (public universities): **4,9 %**



2. State subsidy of public universities in Slovakia

- **432.74 M€** total state subsidy for 20 public universities (in 2011) which are in competition for this money, among these:
- **261.45 M€** for accredited study programs
 - includes subsidy for salaries (**165.21 M€**) which depend:
 - 15 % on the number and categories of **publication output**
 - 85 % essentially on the number of students
- **106.05 M€** for university research
 - main criteria:
 - number of lecturers and researchers multiplied by the results of last complex accreditation (4.0-1.0; indirectly included publication output) (45 %)
 - amount of research grants from abroad (14 %)
 - amount of home research grants (14 %)
 - publication output** (27 %)



12 % of the state subsidy upon publication output

Publication output is used as a scientometric criterion ⇒
⇒ need for an administration system of publication output

Source: http://www.minedu.sk/data/USERDATA/ATEMY/2011/VysSkol/Methodika_2011_WEB.pdf

Specification of state subsidy for public universities in 2011: Table 1

	A	B	C	D	E	F	H	I	J	K	L	M	N	
1	Rozpis dotácie_2011 (RD_2011)_EUR													
2	z toho: Bežné výdavky													
3	VVŠ	Výkonové zložky (07711: MP+odv+TaS) + 0771201	Bežné dotácie na rok 2011 spolu (program 077)	Podprogram 07711- bežné dotácie	07711-mzdy	07711-odvody z miezd 35,2%	07711-TaS	07711-štipendiá doktorandov	077 11 - záloha na klinické pracoviská	Prvok 0771201 - bežné dotácie	07715 - bežné dotácie	Prvok 0771501 - preddavok na sociálne štipendiá	Prvok 0771502 - motivačné štipendiá	Prvok 0771503 - bežné dotácie
4	UK Bratislava	58 967 296	77 188 587	47 499 762	22 358 025	7 870 025	7 056 796	7 729 715	2 485 201	21 682 450	8 006 375	2 239 511	1 018 000	4 748 864
5	UPJŠ Košice	17 153 254	22 757 216	14 564 768	6 656 435	2 343 065	2 427 348	1 766 983	1 370 937	5 726 406	2 466 042	1 367 408	354 700	743 934
6	PU Prešov	12 599 887	18 316 144	11 385 326	5 397 622	1 899 963	2 331 803	1 216 551	539 387	2 970 499	3 960 319	2 702 932	342 150	915 237
7	UCM Trnava	6 147 545	7 613 374	5 659 648	2 881 112	1 014 151	1 243 758	462 610	58 017	1 008 524	945 202	531 398	228 650	185 154
8	UVL Košice	7 923 522	9 159 398	6 380 786	2 974 668	1 047 083	1 771 142	587 893		2 130 629	647 983	276 318	78 600	293 065
9	UKF Nitra	15 128 463	19 265 704	12 943 483	6 462 251	2 274 712	2 474 986	1 484 369	247 165	3 916 514	2 405 707	1 306 014	401 300	698 393
10	UMB B.Bystrica	14 573 110	18 590 413	11 868 917	6 109 460	2 150 530	2 343 500	1 265 427		3 969 620	2 751 876	1 361 789	378 200	1 011 887
11	TvU Trnava	8 022 578	10 243 014	7 217 969	3 368 177	1 185 598	1 394 096	996 745	273 353	2 074 707	950 338	617 061	219 300	113 977
12	STU Bratislava	45 983 720	56 943 985	35 234 060	17 138 021	6 032 583	5 800 174	6 263 282		17 012 942	4 696 983	1 146 718	796 400	2 753 865
13	TU Košice	29 320 579	38 957 862	23 665 593	11 880 335	4 181 878	4 502 917	3 100 463		8 755 449	6 536 820	3 114 111	618 250	2 804 459
14	ŽU Žilina	20 930 859	27 056 909	16 566 766	8 217 291	2 892 486	3 127 112	2 329 877		6 693 970	3 796 173	1 164 348	443 950	2 187 875
15	TUAD Trenčín	6 042 003	7 677 563	5 708 837	2 740 431	964 632	1 147 668	499 722	356 384	1 189 272	779 454	514 566	158 700	106 188
16	EU Bratislava	16 282 842	20 861 429	14 102 139	7 068 976	2 488 280	3 054 510	1 490 373		3 671 076	3 088 214	1 227 132	490 400	1 370 682
17	SPIU Nitra	15 797 670	19 237 006	12 974 528	6 282 008	2 211 267	2 894 781	1 586 477		3 909 614	2 352 864	946 467	341 050	1 065 347

Source: <http://www.minedu.sk/index.php?lang=sk&rootId=7842>

Specification of state subsidy for public universities in 2011: Table 14

	A	B	C	H	I	J	K	L	M	N	O	P	Q	R	S
1															
2		RD z roku 2010 na prvku 07712 01		úspešnosti v domácich h 14%		Podiel pre rozpis podľa úspešnosti v zahraničných grantoch 14%				Podiel pre rozpis podľa publikačnej činnosti a umeleckej tvorbe		Podiel VVŠ na výkonomom rozpise dotácie na výskumnú, vývojovú alebo umeleckú činnosť	Prepočítaný podiel VVŠ na výkonomom rozpise	Rozpis dotácie na rok 2011 v EUR pred úpravou na garantované minimum	Garantované minimum
3	VVŠ	RD z roku 2010 na mzdy	RD z roku 2010 na TaS	Objem domácich grantov na VaT od 1.11.2007 do 31.10.2009	Podiel vysokej školy na grantovej úspešnosti domáce granty	Objem zahr. grantov na VaT od 1.11.2008 do 31.10.2009	Objem zahr. grantov na VaT od 1.11.2007 do 31.10.2008	Objem zahr. grantov na VaT od 1.11.2007 do 31.10.2009	Podiel vysokej školy na grantovej úspešnosti - zahraničné granty	Podiel na publikačnej činnosti 24,5%	Podiel na umeleckej tvorbe 2,5%				
4	UK Bratislava	3 782 019	711 006	16 325 641	24,29	1 600 683	1 071 237	2 671 919	26,47	26,04	2,67	23,713	23,713	22 294 153	20 765 33
5	UPJŠ Košice	969 165	182 199	4 457 840	6,63	264 192	303 767	567 959	5,63	9,05	0,00	6,585	6,585	6 190 866	5 030 05
6	PU Prešov	575 575	108 206	1 176 372	1,75	10 041	13 650	23 691	0,23	4,10	4,86	3,393	3,393	3 189 904	2 641 55
7	UCM Trnava	176 928	33 262	339 446	0,51	53 519	46 800	100 319	0,99	1,40	0,47	1,258	1,258	1 182 348	747 91
8	UVL Košice	344 272	64 722	2 108 397	3,14	93 349	293 833	387 182	3,84	2,37	0,00	2,477	2,477	2 328 762	1 833 57
9	UKF Nitra	798 044	150 029	1 415 054	2,11	78 084	67 394	145 478	1,44	5,33	2,70	3,834	3,834	3 604 336	3 916 51
10	UMB Banská Bystrá	789 577	148 438	991 164	1,47	83 055	47 237	130 292	1,29	5,31	2,81	4,385	4,385	4 122 732	3 740 06
11	TVU Trnava	404 189	75 986	655 217	0,97	26 285	19 614	45 899	0,45	2,34	1,51	1,721	1,721	1 617 781	2 074 70
12	STU Bratislava	2 843 405	534 550	17 322 586	25,77	1 264 455	1 494 235	2 758 690	27,33	17,73	2,17	18,750	18,750	17 627 872	16 090 99

Source: <http://www.minedu.sk/index.php?lang=sk&rootId=7842>

3. Administration systems of publication output

World: Databases Web of Knowledge (WoK), Current Content Connect (CCC), SCOPUS, ...

used in Slovakia, but do not cover the whole publication output, e.g. in humanities or social sciences

Slovakia: Database CREPČ (Centrálny register evidencie publikačnej činnosti Central registry of publication output) – includes whole published output of the public universities; data imported from university libraries; input for calculation of state subsidy;

<http://www.crepc.sk/portal?fn=main>



UPJŠ: university database of publication output (ALEPH) input through a web form; export to CREPČ

<http://ciakt.upjs.sk/uk/publikacie2.php>

<https://aleph.upjs.sk/>

Web form for registration of the publication as input in the university database

Formulár pre evidenciu publikačnej činnosti zamestnancov UPJŠ v Košiciach

Názvy povinných polí sú vyznačené farebne.

1) V prípade dokumentu s viacerými autormi sa označí autor, ktorý formulár vyplňuje, kliknutím na príslušné pole za poradovým číslom daného autora.

Po vyplnení formuláru máte pred jeho odoslaním ešte možnosť skontrolovať a prípadne upraviť vami zadané údaje. **Po odoslaní formulára je potrebné zobrazený informačný hárok vytlačiť a podpísaný doručiť zodpovednému pracovníkovi UK UPJŠ.**

Informácie o autoroch dokumentu

Zadajte počet autorov evidovaného dokumentu:

Por. ¹	Meno	Priezvisko	Titul(y)	%	Pracovisko	Ústav/Katedra	Kontakt (t.č./email)
1. <input type="radio"/>	Juraj	Černák	prof.	50	Vyberte pracovisko		
2. <input type="radio"/>					Vyberte pracovisko		

Informácie o

Názov dokumentu (uvedený v jazyku dokumentu)

Preklad názvu dokumentu (do angličtiny / slovenčiny - ak je jazyk dokumentu iný ako slovenčina)

Kľúčové slová (slovenčina)

Kľúčové slová (angličtina)

Source: <http://ciakt.upjs.sk/uk/publikacie2.php>

Classification of published output in Slovakia

In Slovakia the publications are classified according to the legislative document [1]. For classification a **three-positioned code XYZ** is used :

1st position (originality and type of the publication):

A scientific; **B** specialised; **C** artistic; **D** dissertations;
E reviews, reports, translations; **F** editorial; **G** popularizing

2nd position (character of the publication) :

A monograph or book; **B** chapter in a book; **C** chapter or full textbook;
D journal paper; **E** paper in proceedings; **F** conference proceedings; **G** reports, legislative documents; **H** electronic publication on the web; **I** other

3rd position (territoriality of the publication) :

A abroad; **B** in Slovakia (home); **C** paper in international CCC type journal; **D** papers in home CCC type journal; **E** international journal paper; **F** home journal paper.

Examples: **ADC** - scientific papers in journal covered by CCC database printed abroad
AFK - poster presented at conferences abroad

[1] Smernica č. 13/2008-R zo 16. októbra 2008 o bibliografickej registrácii a kategorizácii publikačnej činnosti, umeleckej činnosti a ohlasov

Example of partial output from the university database of published output (2011)

ACC - Chapters in university textbooks published abroad (1)

ACC1 Vlastnosti tuhých látok pri nízkych teplotách
Alexander Feher, Miloš Rotter
Fyzika nízkých teplot I. a II. část, Praha : matfyzpress, 2011, ISBN 9788073781682, S. 526-564

ACD - Chapters in university textbooks published in the country of residence (1)

ACD1 Determinanty zdravia alebo čo ovplyvňuje zdravie ľudí
Ivan Rovný, Peter Juriš, Martin Starzyk
Vybrané kapitoly verejného zdravotníctva I, Bratislava : INTERPHARM Slovakia, a.s. Bratislava, 2011, ISBN 9788089057337, S. 179-232

ADC - Scientific/scholarly papers published in the journals registered in the Current Contents Connect database and published abroad (227)

ADC1 (E)-2-Benzylidenecyclanones : Part VI. Solvent effect on the UV and fluorescence properties of some chalcones and their cyclic analogues. Interaction of 4-dimethylaminochalcones with bovine and human serum albumin : a UV-vis study
Krisztina Fodor, Vladimíra Tomečková, Tamás Köszegi, Ivan Kron, Pál Perjési
Monatshefte für Chemie, ISSN 0026-9247, Vol. 142, no. 5 (2011), s. 463-468

ADC2 A dispersive liquid-liquid microextraction for determination of boron in water after ultrasound-assisted conversion to tetrafluoroborate
Lenka Rusnáková, Vasiľ Andruch, Ioseph S. Balogh, Jana Šandrejová
Talanta, ISSN 0039-9140, Vol. 85, no. 1 (2011), s. 541-545

⇒ export to CREPČ

Examples of output from the CREPČ database (2009)

AAA Vedecké monografie vydané v zahraničných vydavateľstvách

Počet záznamov: 3

ref. číslo: UPJŠ.Košice.000034555

AAA001 Lisý, Vladimír - Tóthová, Jana - Brutovský, Branislav: Continuum models for low-frequency dynamics of macromolecules and vesicles. / [Kontinuálne modely nízkofrekvenčnej dynamiky makromolekúl a vezikúl.] . Brno : Tribun EU, 2008. - s. 208. - ISBN 9788073995713

ref. číslo: UPJŠ.Košice.000038081

AAA002 Komanický, Vladimír: Fabrication of Single Crystal Ultramicroelectrodes of Noble Metals : growing single crystals of coinage metals in laboratory / [Príprava monokryštalických ultramikroelektród drahých kovov : príprava monokryštálov drahých kovov v laboratóriu.] . Kolín : Lambert Academic Publishing, 2009. - 170 s. - ISBN 9783838306018(BROŽ.)

ref. číslo: UPJŠ.Košice.000038231

AAA003 Walko, Martin: Molecular and Biomolecular Switches / [Molekulové a biomolekulové spínače.] . Groningen : Rijksuniversiteit Groningen, 2009. - 191 s. - ISBN 9789036738965

Source: <http://www.upjs.sk/public/media/3053/upjs2009-pf.pdf>

Classification of published output by the Ministry used for the budget subsidy

Four groups are defined and each group gathers several similar types of publications:

A1 scientific monographs (full or chapters) and other papers of this type:

AAA, AAB, ABA, ABB, ABC, ABD; weight 2/9

A2 textbooks, artistic monographs, translations, editorial work, dictionaries,

encyclopaedia: ACA, ACB, BAA, BAB, BCB, BCI, EAI, CAA, CAB, EAJ, FAI; weight 1/3

B papers in journals gathered in CCC database and patents : ADC, ADD, BDC, BDD, CDC,

CDD, AEG, AEH, AGJ; preference is given to papers ADC, ADD (multiplication factor 5/2); weight 2/9

C other reviewed publications: ACC, ACD, ADE, ADF, AEC, AED, AFA, AFB, AFC, AFD, AFE,

AFF, AFG, AFH, BBA, BBB, BCK, BDA, BDB, BDE, BDF, BEC, BED, BFA, BFB, BGH, CDE, CDF; weight 2/9

Specification of state subsidy for public universities : Table 20

Upozornenie zabezpečenia Určitý aktívny obsah bol vypnutý. Podrobné informácie získate kliknutím sem. Povolit' obsah																				
L3 =H3/\$H\$23																				
P.č.	VVS	Váňovaný počet záznamov za roky 2008 a 2009						Pre výpočet na 077 11										Podiel na pulikačnej činnosti VVS_2010 077 11	Podiel na pulikačnej činnosti VVS_2010 077 12	Pc pul čí VV
		A1	A2	B	C1	C2	C = C1+C2	A1	A2	B	C	C2	A1	A2	B	C	spoľu 07711			
1.	UK	283,4	819	6500	2894	19286	22180	0,1583	0,1691	0,3644	0,1555	0,1532	0,035	0,056	0,081	0,035	0,207	0,26	20,71	26,04
2.	UPJŠ	65,2	192	2552	616	5049	5665	0,0364	0,0396	0,1431	0,0397	0,0401	0,008	0,013	0,032	0,009	0,062	0,09	6,19	9,05
3.	PU	126,8	349	318	949	6835	7784	0,0708	0,0721	0,0178	0,0546	0,0543	0,016	0,024	0,004	0,012	0,056	0,04	5,59	4,10
4.	UCM	29,2	112	239	331	1515	1846	0,0163	0,0231	0,0134	0,0129	0,0120	0,004	0,008	0,003	0,003	0,017	0,01	1,72	1,40
5.	UVL	18,2	99	590	349	2618	2967	0,0102	0,0204	0,0331	0,0208	0,0208	0,002	0,007	0,007	0,005	0,021	0,02	2,10	2,37
6.	UKF	181	365	383	851	7696	8547	0,1011	0,0754	0,0215	0,0599	0,0611	0,022	0,025	0,005	0,013	0,066	0,05	6,57	5,33
7.	UMB	192,8	390	321	1033	7400	8433	0,1077	0,0805	0,0180	0,0591	0,0588	0,024	0,027	0,004	0,013	0,068	0,05	6,79	5,31
8.	TVU	81	222	159	547	3405	3952	0,0453	0,0458	0,0089	0,0277	0,0270	0,010	0,015	0,002	0,006	0,033	0,02	3,35	2,34
9.	STU	161,8	412	4312	2331	18455	20786	0,0904	0,0851	0,2418	0,1458	0,1466	0,020	0,028	0,054	0,032	0,135	0,18	13,46	17,73
10.	TUKE	92,2	326	765	954	13837	14791	0,0515	0,0673	0,0429	0,1037	0,1099	0,011	0,022	0,010	0,023	0,066	0,06	6,65	5,89
11.	ŽU	47,6	239	268	1802	10093	11895	0,0266	0,0493	0,0150	0,0834	0,0802	0,006	0,016	0,003	0,019	0,044	0,03	4,42	3,15
12.	TUAD	22,6	90	360	315	3251	3566	0,0126	0,0186	0,0202	0,0250	0,0258	0,003	0,006	0,004	0,006	0,019	0,02	1,90	1,90
13.	EU	123,4	381	191	1134	9693	10827	0,0689	0,0787	0,0107	0,0759	0,0770	0,015	0,026	0,002	0,017	0,061	0,04	6,08	4,14
14.	SPU	58,4	264	534	1143	7439	8582	0,0326	0,0545	0,0299	0,0602	0,0591	0,007	0,018	0,007	0,013	0,045	0,04	4,54	3,66
15.	TUZVO	71,4	208	214	341	4342	4683	0,0399	0,0429	0,0120	0,0328	0,0345	0,009	0,014	0,003	0,007	0,033	0,02	3,31	2,49
16.	VŠMU	12,4	17	0	68	105	173	0,0069	0,0035	0,0000	0,0012	0,0008	0,002	0,001	0,000	0,000	0,003	0,00	0,30	0,22
17.	VŠVTI	5,6	40	0	178	97	275	0,0031	0,0083	0,0000	0,0010	0,0008	0,001	0,003	0,000	0,000	0,004	0,00	0,30	0,11

Source: <http://www.minedu.sk/index.php?lang=sk&rootId=7842>

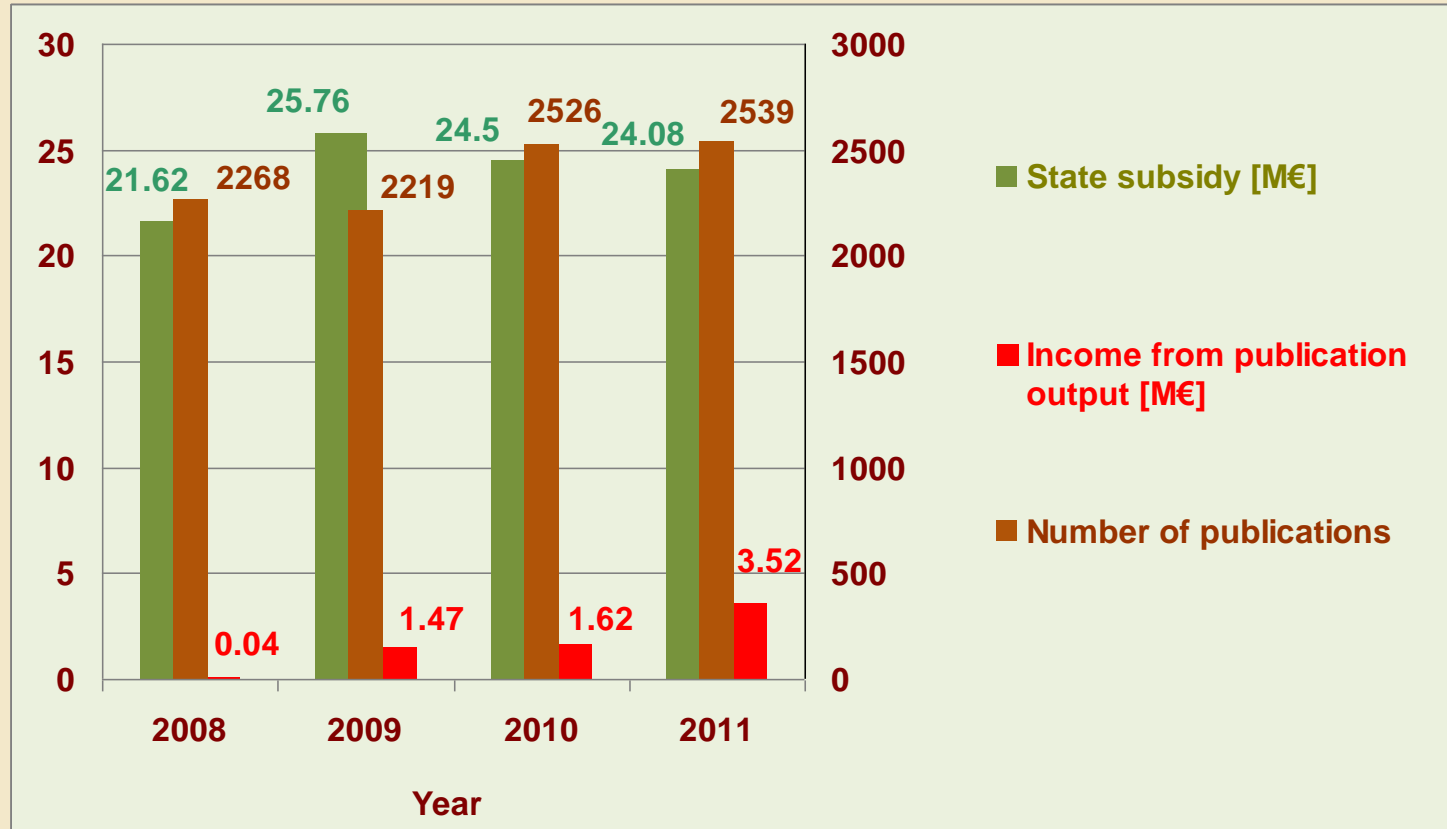
4. Number of publications and the state subsidy on UPJŠ

Category of pub. output	year			
	2008	2009	2010	2011
A1	26	29	31	64
A2	97	95	150	104
B	313	315	380	330
C	1832	1780	1965	2041
Sum	2268	2219	2526	2539
Received direct subsidy (M€)	0.04	1.47	1.62	3.52

Calculated "income" of one publication for the university budget:

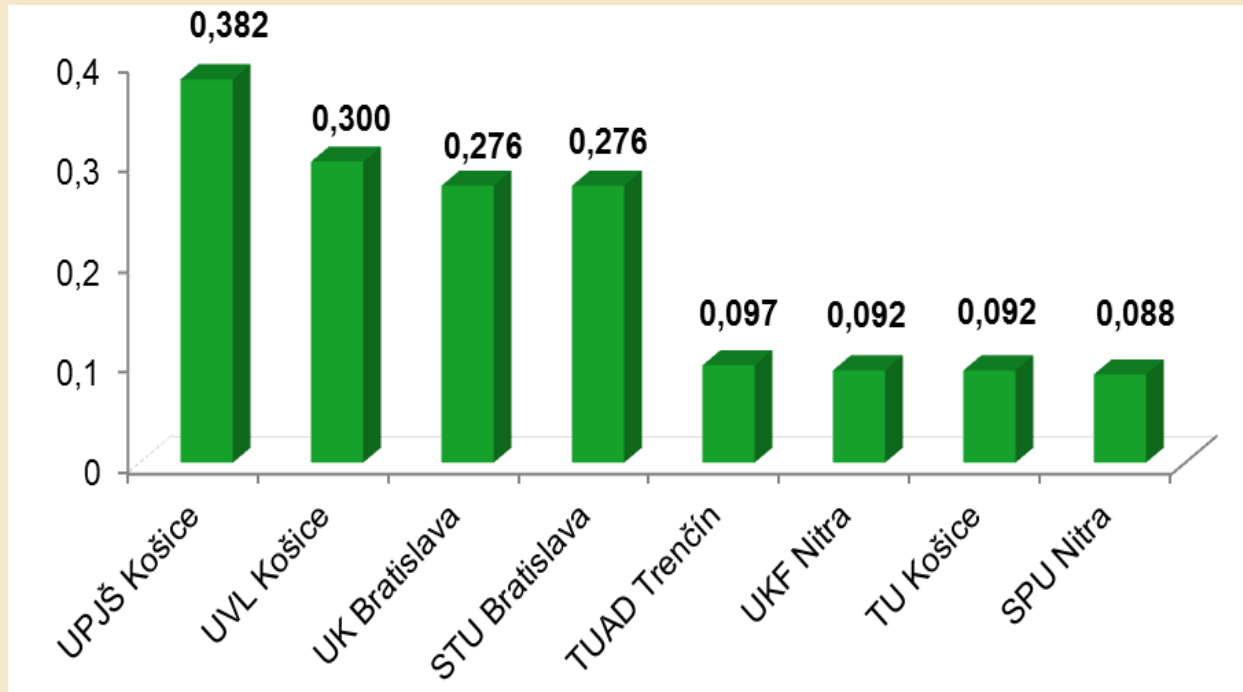
A1: 6-7 k€; A2: 5-6 k€; B: 4-5 k€; C: 0.05-0.04 k€

State subsidy, number of publications and income from published output between 2008-2011



Increasing weight of the publication output resulted in the increasing income of UPJŠ

Ranking of the Slovak universities based on the number of papers published in CCC type journals per one lecturer/researcher



Data taken from [1]

[1] Rozpis dotácií zo štátneho rozpočtu verejným vysokým školám na rok 2010 (<http://www.minedu.sk/index.php?lang=sk&rootId=5528>).

5. Publication output and citations in qualification growth of lecturers

- **Publications and citations are important for the habilitation (associate professor status) and inauguration (full professor status) procedures [1,2];**
- **The candidates have to fulfill defined minimum values of scientometric criteria;**
- **The criteria vary upon the research area of the candidate;**
- **The quantitative criteria are approved by the Scientific Board of the university [3];**
- **Criteria may vary from university to university but they have to be accredited by the Accreditation Committee.**

[1] Vyhláška MŠ SR č. 6/2005 Z. z. z 8.12.2004 o postupe získavania vedecko-pedagogických titulov alebo umelecko-pedagogických titulov docent a profesor;

[2] Rozhodnutie MINISTERSTVO ŠKOLSTVA SLOVENSKEJ REPUBLIKY z 5. júna 2008;

[3] Kritériá na získanie vedecko-pedagogických titulov docent a profesor

Examples of selected criteria for habilitation procedure:

	CHEMISTRY BIOLOGY	LAW
Textbook	1	1
Monograph	*	1
Research papers	25 (or 15 CC)	22
Papers in CCC type journals	10	*
Citations	22	10
Citations in WoK/SCOPUS	15	*
Research grants	2	2

* not required

Examples of selected criteria for inauguration procedure:

	CHEMISTRY BIOLOGY	LAW
Textbook	3	1
Monograph	1	2
Research papers	50	44
Papers in CCC type journals	30	1
Citations	65	35
Citations in WoK/SCOPUS	40	*
Head of research grants	2	3

* not required

6. Further activities in which the number and quality of publications and citations play an important role

- Accreditation of study program - guarantors required :
bachelor level – assoc. professor;
master level – full professor;
doctoral level – full professor and two assoc. professors;
- Accreditation of the rights for habilitation and inaugurations - guarantors required: full professor and two assoc. professors
- Financial support from grant agencies: no previous publications = no grant
- International ranking agencies, e.g. SCIMAGO LAB based on SCOPUS (UPJŠ: 3rd place in Slovakia)
(http://www.scimagoir.com/pdf/sir_2012_world_report.pdf)
- Home ranking and rating agency ARRA (<http://arra.sk/>)

7. Conclusions

1. **Scientometric criteria, especially publication output, play an important role in the life of the public universities in Slovakia**
2. **National and university databases are essential because the international databases do not cover all publications especially in the field of arts and humanities.**
3. **It is desirable to rise the impact of the publication output in direct state subsidy because it reflects the quality of the scientific work and its recognition.**

Acknowledgement

I wish to thank the Conference Organizing Committee for their kind invitation and for the opportunity to give this presentation.

Thank you very much for your attention!