

## Exchange rate profiteering and cost-effectiveness of physics journals - 2004 Update

Dana L. Roth  
Caltech 1-32  
Pasadena, CA 91125  
dzrplib@library.caltech.edu

### Abstract:

US\$ subscribers are paying significant 'surcharges' for European journals, when US\$ prices are compared with the corresponding EURO prices, suggesting exchange rate profiteering. Furthermore, large differences in the relative cost effectiveness were observed across three publisher titles. The maximum variance in 'cost per use per Impact Factor' analysis was 11/1.

While preparing this update, on last year's talk (1), I saw a letter in Physics World entitled "US threats to European journals"(2).

The authors claimed that ... "of the 90,000 articles published in physics journals in 2000 ... some 39% came from Europe, whereas only 29% originated in the US.

They also stated that ... "European physics journals only have a 27% share of this 'market' because more and more European physicists are publishing their papers in American journals.

For instance, 35% of the papers in journals published by the APS are by European authors, compared with only 25% by American physicists."

Their fear is that this effect will soon lead to the disappearance of many smaller European journals. Their solution, however, seems limited to an expectation that the creation of the European Physical Journal coupled with an 'Open Archive' of historical European physics journal articles will reverse this trend.

I would suggest that they are missing some very essential points. First is the lack of affordable reader access to the current and archival content of the major continental European physics journals, e.g., European Physical Journal. C (Springer-Verlag), Nuclear Physics (Elsevier), Physica Status Solidi. B (Wiley-VCH), ... which is further exacerbated by what appears to be exchange rate profiteering by the major continental European commercial publishers.

Compare, for example, the actual US\$ & 'exchange rate' US\$ subscription prices for 2003 and 2004. This has been a continuing problem that began with the year 2000 subscription prices. At that time, the major European commercial publishers stopped basing their US\$ subscription rates on the corresponding Euro rate, with the US\$ subscription price based on the average US\$/EURO exchange rate for the previous July to June period.

The first line for each journal gives the US\$ subscription rate, while the second line gives the EURO rate and what the US\$ rate would have been if calculated according to the

pre-2000 pricing policy. The figures under SC is the 'surcharge' US\$ subscribers paid, since they were not allowed to purchase these journals at the exchange rate EURO price.

Journal	2003	SC	2004	SC
Eur. Phys. J. C:	\$6,289 E5250 (\$4,704)	34%	\$4,743 E3,872(\$4,058)	17%
Nucl. Phys. Complete	\$23,701 E21,187 (\$18,984)	25%	\$25,242 E22,564(\$23,647)	7%
Physica Status Solidi B:	\$4198 E3398 (\$3,045)	38%	\$4914 E3858 (\$4043)	21.5%
Average US\$ cost EURO	\$0.896 (7/1/01-6/30/02)		\$1.048(7/1/02-6/30/03)	

The 'surcharge' decreased between 2003 & 2004 primarily because of the decline in the value of the US\$.

Furthermore, in high energy physics, for example, there is an enormous disparity between subscription costs and the cost-effectiveness of the APS journals and their continental European commercial counterparts.

Compare, for example, the 2001 and 2002 cost/article/Impact Factor of the following titles.

	#articles	Cost	C/A	IP	C/A/IP
2001					
2002					
Phys Rev. D	1955	\$3,270	\$1.42	4.363	0.38
	2275	\$3,630	\$1.60	4.385	0.36
Eur. Phys. J. C	402	\$6,113	\$15.21	5.194	2.93
	372	\$6,289	\$16.91	6.162	2.74
NP. B	712	\$12,598	\$17.69	6.593	2.68
	603	\$13,417	\$22.25	5.409	4.11
(2003)	551	\$14,423	\$26.17		

A more meaningful comparison of these titles is the normalized Cost/Article/Impact Factor. Normalization is simply the rescaling of a set of values, e.g., dividing each journal's C/A/IP by the value for a baseline journal. This results in the baseline journal having an relative value of 1 and quickly provides a rescaled and more easily understandable comparison, with the other journals.

Normalization using 'Physical Review D' as the baseline journal gives:

Journal	2001	2002
Physical Review. D	1.00	1.00
European Physical Journal. C	7.70	7.62
Nuclear Physics. B	7.06	11.42

This would suggest that the cost-effectiveness of 'Phys. Rev. D' remained relatively constant at over a factor of 7 compared with the European Physical Journal C, and increased from a factor of 7 to a factor of over 11 compared with Nuclear Physics. B.

In closing, it is very difficult not to be troubled by journals which significantly increase their subscription price in the face of declining size. This problem is not unique to Nuclear Physics B, which in 2003 again decreased the number of articles published ... to 551, while raising the price to \$14,423. This resulted in an increase of the subscription cost/article to \$26.17. Others, such as Biopolymers, are similarly guilty ... of what appears to be a 'death spiral' that is reminiscent of the final years of Gordon and Breach.

P.S. There is an additional factor in the decline of physics papers published in Europe, that was pointed out to me by Bob Michaelson, namely that this might "be due to the declining representation of American students in American grad schools. More of the U.S. graduate student population comes from (and in many cases will return to) countries outside the U.S., and they (may have) become accustomed to publishing in U.S. journals."

1. Comment: Letters. D. Jerome and J.-M. Raimond. 'US Threats to European journals.' Physics World 17(5), 20 (May, 2004).

2. Roth, D.L. 'Exchange rate profiteering and cost-effectiveness of physics journals.' SLA Annual Conference, New York, 2003.  
<http://caltechlib.library.caltech.edu/archive/00000063/01/roth.pdf>