Trends in economics publications represented by JEL categories between 2007 and 2013

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Abstract

This article updates Kelly and Bruestle (2011) by illustrating how publication trends in different subject categories in economics evolved from 2007 to 2013. Using data from RePEc we show that the largest increase in the relative share was for articles published in JEL category Q ("Agricultural and Natural Resource Economics, Environmental and Ecological Economics") over this period. Furthermore, we provide evidence that the number of JEL categories per article increased over the last 25 years.

JEL Code: A12, A14
Keywords: JEL classification, economics, research fields

Running Title: Trends in economics publications 2007-2013

1 Introduction

This article updates Kelly and Bruestle (2011) by showing how publication trends in different subject categories in economics evolved from 2007 to 2013. Using data from RePEc, we investigate how the relative shares of all Journal of Economic Literature (JEL) categories developed over time. We show, that the share of articles from finance and the environmental categories increased substantially over our investigated period. Furthermore, the number of stated JEL categories for each article increased from 1991 to 2013. After describing the data set and providing evidence on recent publication trends, we relate our results to the existing literature.

2 Data

We extracted our data from RePEc (Research Papers in Economics, www.repec.org). In economics, RePEc has become an essential source for the spread of knowledge and ranking of individual authors and academic institutions. RePEc is based on the "active participation principle", i.e. that authors, institutions and publishers have to register and to provide information to the network. This approach has the main advantage that a clear assignment of works and citations to authors and articles is possible. Indeed, the RePEc story has become a success, with more than 45,000 registered authors with listed works and 2,250 journals in economic sciences worldwide as of August 2015. Using a unique identifier, we downloaded all meta-information for all journal articles listed in RePEc from 2007 to 2013. We excluded articles with obviously misclassified bibliometric information. Around 17% of the RePEc articles is research-classified by Journal of Economic Literature (JEL) codes. We increase this share by including the JEL data from EconLit and the respective journal websites. All data were downloaded on 01/19/2015. We end up with 134,558 articles with JEL classifications.

For weighting purposes, we use the simple impact factor from RePEc. This is in contrast to Kelly and Bruestle (2011), who utilized the Eigenfactor.com's Article Influence (AI) score. The reason is, that RePEc provides for *every* journal an impact factor, whereas Eigenfactor.com

currently (August 2015) provides a metric for only 212 economics journals. The definition of the RePEc impact factor is similar to the "official" one published by Thomson Reuters Journal Citation Reports. The main difference is the year and article coverage of citation counts. In RePEc, all citations are related to total number of registered articles in a journal. For further details on RePEc see Zimmermann (2013) and Seiler and Wohlrabe (2012).

3 Results

First of all, we updated the data of Kelly and Bruestle (2011) on the average percentage shares of all articles by subject groups. They find for the time between 1970 and 2007 the highest increase of articles in "Law and Economics" (JEL category K) and "Schools of Economic Thought and Methodology" (B). Moreover, the proportionally largest decline in published papers during this period was in the JEL category N (Economic History). As Table 1 shows, we find for the recent time period between 2007 and 2013, that the share of Economic History papers is still declining. However, there is a huge increase in the share of papers published in the research field "Agricultural and Natural Resource Economics, Environmental and Ecological Economics" (Q). This surplus is mainly driven by the JEL sub-categories Q1 (Agriculture), Q4 (Energy), and Q5 (Environmental Economics). Also on the rise are papers of the subject groups "General Economics and Teaching" (A) and "Financial Economics" (G). Kelly and Bruestle (2011) record large differences for their quality-weighted results. The rising star was the sub-category "Microeconometrics - Information, Knowledge, and Uncertainty" (D8). However, more striking is their result, that the JEL category Q is between the 1970s and the 2000s the one with the largest losses in quality-weighted shares. This is the JEL category where we found the largest increase for the recent years. Nevertheless, with our quality-weighted results we can confirm that this JEL category belongs to the one with the largest increase. JEL category A is the only one with a higher increase. In absolute terms, the subject group "Financial Economics" had the largest share in the early 2000s. This has been replaced by the JEL category Q, which takes a share of 13.45% of all economics papers in our data set in 2013. Quality-weighted the largest share of papers is still in category G (14.96%).

2

In a second step, we consider the average number of JEL categories which are stated per paper. Thereby, Figure 1 shows a clear increase between 1991 and 2013. For this sub-analysis we use the same data set comprising 219,067 articles as in Rath and Wohlrabe (2015). We investigated the determinants of this increase by means of a Poisson regression with the dependent variable being the sum of JEL categories stated for each paper. The results are shown in Table 2. All coefficients are significantly different from zero and can explain the number of JEL categories. Firstly, we find that the time trend is increasing at a decreasing rate. Secondly, the journal impact factor of RePEc has a negative affect on the number of JEL categories. Thirdly, the number of authors has a strong positive effect on the average number of JEL categories. The straightforward explanation is, that papers which combine contents of two or more JEL categories are often jointly written by experts of these categories. Last but not least, the number of characters of a title and the number of journal pages are on average increasing with the JEL categories of the paper.

How do our results relate to the recent literature? Boppart and Staub (2012) considered 45,553 economics articles between 1991 and 2009 on the average JEL categories per article and also find an increasing trend in the number of stated JEL categories (from 1.4 to 1.9). Card and DellaVigna (2013) show for five top economics journals that the number of JEL categories referred to increased from 1.6 in 1970 to 2.0 in 2012. In contrast, we find in our data set for the year 2012 an average of 2.8 number of JEL categories per paper. In addition, unlike us, they do not find any outstanding proportionate increase or decrease of any JEL category. Moreover, Kosnik (2015) examine a text analysis of seven top economics journals and find a steady decline of the relative total word count of macroeconomic papers with respect to all categories over the time period from 1960 until 2010. However, micro-founded macroeconomic papers are an exception in this trend. She finds all other subjects to have a relative constant share. In contrary, we find in our data set a slight increase of the share of macroeconomic papers. However, our quality-weighted results indicate as well a diminishing importance of macroeconomics research. Fourcade, Ollion, and Algan (2015) investigate the connection of publications in five top economics journals to related disciplines by analysing citation counts.

They find a decreasing engagement of economics in mathematical and statistical fields, whereas social sciences and especially finance grew in importance in the last fifty years. The increasing importance of financial economics is in line with our results.

4   Conclusion

This paper examines the publication shares of various research fields in economics between 2007 and 2013. We find a strongly increasing popularity of research in Agriculture, Energy, and Environmental Economics. Using the simple journal impact factor of RePEc, we can show, that the JEL categories "Financial Economics" has the largest quality-weighted share in economics research. Furthermore, the average sum of JEL categories per paper increased from around 1.6 in 1991 to 3.0 in 2013 in our data set. Our regression results show, that the sum of JEL categories increase with the number of authors, characters of the title, and journal pages. In contrast, the number of JEL categories decrease with the journal impact factor of RePEc.
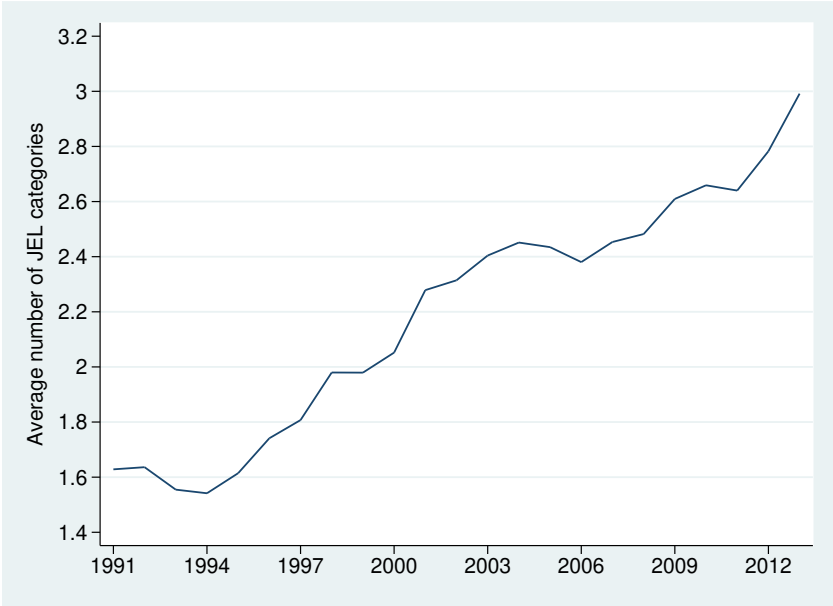

Figure 1: Average number of JEL categories per paper

Table 1: Average Percentage of All Articles by Subject

	JEL Classification	Unweighted			Weighted		
		2007	2013	Change	2007	2013	Change
A	General Economics and Teaching	0.73	0.97	32.92	0.28	0.42	49.81
B	History of Economic Thought, Methodology, and Heterodox Approaches	1.27	1.23	-2.89	0.46	0.56	20.77
C	Mathematical and Quantitative Methods	6.28	6.98	11.13	7.35	8.46	15.22
D	Microeconomics	9.35	8.48	-9.26	12.78	12.33	-3.55
E	Macroeconomics and Monetary Economics	7.93	8.32	5.00	10.41	10.12	-2.75
F	International Economics	7.76	6.25	-19.48	6.69	6.34	-5.21
G	Financial Economics	8.63	10.55	22.31	12.10	14.96	23.62
H	Public Economics	4.67	4.20	-10.01	4.56	4.54	-0.54
I	Health, Education, and Welfare	5.72	3.73	-34.79	3.60	4.10	13.88
J	Labor and Demographic Economics	8.12	6.33	-21.99	8.96	8.48	-5.38
K	Law and Economics	1.38	1.68	21.67	1.27	1.26	-0.76
L	Industrial Organization	9.41	7.49	-20.43	8.71	7.14	-18.00
M	Business Administration and Business Economics, Marketing, Accounting	3.76	4.10	8.89	2.64	1.79	-32.46
N	Economic History	1.15	0.89	-22.38	1.19	1.17	-2.16
O	Economic Development, Technological Change, and Growth	9.80	7.91	-19.24	9.01	7.63	-15.33
P	Economic Systems	2.33	2.04	-12.44	1.50	1.27	-15.13
Q	Agricultural and Natural Resource Economics, Environmental and Ecological Economics	4.96	13.45	171.06	3.94	5.13	30.14
R	Urban, Rural, Regional, Real Estate, and Transportation Economics	4.39	3.76	-14.53	3.31	2.96	-10.56
Y	Miscellaneous Categories	1.07	0.54	-49.49	0.44	0.43	-3.49
Z	Other Special Topics	1.29	1.09	-15.74	0.80	0.93	16.22

Table 2: Results for Poisson Regression

Variable	Coefficient	p-value
Constant	0.110	0.000
Year	0.032	0.000
Year^2	-0.001	0.000
Journal impact factor in RePEc	-0.001	0.002
Authors	0.014	0.000
Title (Number of characters)	0.001	0.000
Number of journal pages	0.004	0.000
N	219067	

The dependent variable is the number of JEL categories per paper.

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