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A bibliometric analysis of the journal of political economy

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ABSTRACT

The Journal of Political Economy was created in December 1892. In 2017, the journal celebrates the 125th anniversary. Motivated by this event, this study presents a bibliometric overview of the leading trends of the journal according to a wide range of criteria including authors, institutions, countries, papers and keywords. The work uses the Scopus and the Web of Science databases to collect the bibliographic material and considers a wide range of bibliometric indicators including the number of citations and publications, the h-index, citation thresholds and the cites per paper. The study also uses software for the visualization of similarities by using several bibliometric techniques including bibliographic coupling, co-citation and co-occurrence of keywords. Several authors that published their seminal work in the journal have obtained the Nobel Prize in economics. The journal is well-recognized in the scientific community as one of the Top 5 journals in economics.

1. INTRODUCTION

The Journal of Political Economy (JPE) is one of the leading journals in economics and was launched in 1892. J. Laurence Laughlin, founder and chairman of the Department of Political Economy (later Department of Economics) at the University of Chicago, was the first editor of the journal [1]. After Laughlin, many other economists became editors of JPE including several Nobel Prize winners such as Robert Mundell, George J. Stigler, Robert J. Barro, Robert Lucas Jr, James J. Heckman and Gary S. Becker. JPE started as a quarterly journal until 1906 when it started publishing 10 issues per year. In 1922, the journal became bimonthly and continues today to do so. Note that in some exceptional years, the journal published less issues (1944 and 1945) and in some other years it also published some additional supplements.

In 2017, JPE becomes 125 years old. In order to celebrate this anniversary, this study develops a bibliometric analysis of the publications of JPE. The objective is to identify the leading trends occurring in the journal by identifying the most productive and influential authors, institutions and countries. Additionally, the work also identifies the most influential papers, keywords and journals in JPE. The analysis employs several bibliometric indicators and techniques by using the Web of Science database and a software for building graphical maps.

Bibliometrics is a research field of library and information science [2] that studies the bibliographic material with quantitative methods [3]. It is very useful for classifying academic research providing general overviews of a specific issue like a research field, a journal or a country [4]. From this point of view, bibliometrics is considered a useful tool for predicting future Nobel Prize winners [5].

Currently, there is no bibliometric study of the publications of JPE. Therefore, the aim of this work is to solve this problem providing a general bibliometric overview of the journal identifying the leading publication and citation trends that have occurred in JPE.

2. BIBLIOMETRIC METHODS

There are a wide range of bibliometric methods in order to analyse the bibliographic data of a set of documents [6]. A first important question is to select the bibliometric indicators that will represent the results considered in the analysis. This work focuses on the total number of papers and citations because these two indicators are very useful to measure productivity and influence [7]. In order to combine both concepts, the study also uses the cites per paper and the h-index [8].

In order to search for the bibliographic data of JPE, the work uses the Web of Science Core Collection database which is usually regarded as one of the leading databases for classifying academic research. Currently, Web of Science includes more than fifteen thousand journals and fifty million documents. The search process considers all the publications of JPE available in Web of Science between 1967 and 2016. For doing so, the analysis uses the keyword “Journal of Political Economy” in the “publication name” option. In order to provide a representative overview, the work considers the last fifty years which represents a reasonable period of time to analyse the results. However, in some special cases such as the

identification of the most cited papers in JPE of all-time, the study considers all the publications of JPE since 1892.

In order to map graphically the bibliographic results, the work uses the VOS viewer software [9]. VOS viewer is a computer software that collects the bibliographic data and builds a wide range of results in the form of maps and tables. It uses several bibliometric techniques including bibliographic coupling [10], co-citation [11] and co-occurrence of author keywords.

3. RESULTS

JPE started publishing papers in 1892. Since then the journal has been growing and establishing as a leading journal in the field of economics. In order to see the evolution of the publications through time, Figure 1 presents the annual number of papers published in JPE since 1967.

During the seventies, JPE published around one hundred papers each year. Later, the journal has been decreasing the number of papers published from sixty papers in the eighties to a bit more than thirty during the last years reaching a minimum of twenty-nine in 2013. Note that the journal has published 3026 documents between 1967 and 2016 if only considering articles, reviews, letters and notes. If considering all the documents of the journal, then JPE has published 3593 documents over the last fifty years. JPE has received a bit more than three hundred thousand citations and an h-index of 250.

Next, let us look into the most cited papers of all-time of JPE. The aim is to identify those studies that have more influence and impact in the scientific community. Table 1 presents a list with the Top 20.

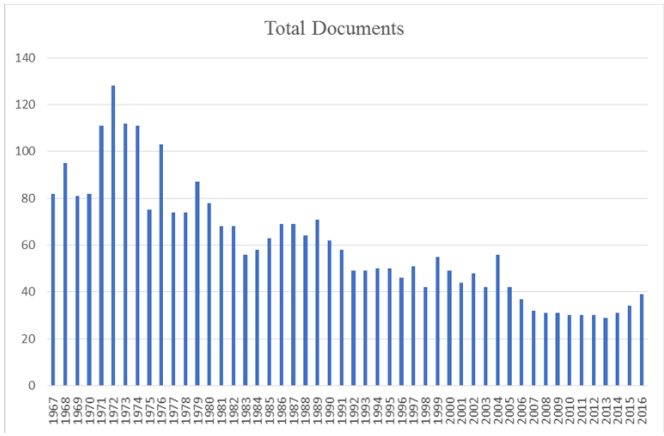

Figure 1. Annual number of publications in JPE (1967–2016)

Table 1. The 20 most cited documents of JPE of all-time

R	Title	Author/s	Year	TC	C/Y
1	Pricing of options and corporate liabilities	Black, F; Scholes, M	1973	8004	182
2	Law and finance	La Porta, R; Lopez-De-Silanes, F; Shleifer, A; Vishny, RW	1998	4604	242
3	Increasing returns and long-run growth	Romer, PM	1986	4442	143
4	A pure theory of local expenditures	Tiebout, CM	1956	4258	70
5	Crime and punishment: economic approach	Becker, GS	1968	3725	76
6	Hedonic prices and implicit markets: product differentiation in pure competition	Rosen, S	1974	3142	73
7	Risk, return, and equilibrium: empirical tests	Fama, EF; MacBeth, JD	1973	2854	65
8	New approach to consumer theory	Lancaster, KJ	1966	2793	55
9	Endogenous technological change	Romer, PM	1988	2731	94
10	Increasing returns and economic geography	Krugman, P	1991	2619	101
11	Agency problems and the theory of the firm	Fama, EF	1980	2587	70
12	The costs and benefits of ownership: a theory of vertical and lateral integration	Grossman, SJ; Hart, OD	1986	2556	82
13	The economics of information	Stigler, GJ	1961	2437	44
14	Rules rather than discretion: inconsistency of optimal plans	Kydland, FE; Prescott, EC	1977	1912	48
15	Bank runs, deposit insurance, and liquidity	Diamond, DW; Dybvig, PH	1983	1849	54
16	Information and consumer behavior	Nelson, P	1970	1832	39
17	Large shareholders and corporate control	Shleifer, A; Vishny, RW	1986	1773	57
18	Performance pay and top management incentives	Jensen, MC; Murphy, KJ	1990	1741	64
19	Are government bonds net wealth	Barro, RJ	1974	1693	39
20	A theory of fads, fashion, custom, and cultural change as informational cascades	Bikhchandani, S; Hirshleifer, D; Welch, I	1992	1671	67

Abbreviations: R = Rank; TC = Total citations; C/Y = Cites per year.

The most cited paper in JPE is the seminal work of Fischer Black and Myron Scholes regarding the “pricing of options and corporate liabilities” that introduced the famous Black-Scholes model for determining the price of financial options [11]. This research led Scholes to win the Nobel Prize in economics in 1997. Note that the reason why Black did not get the Nobel Prize was his decease in 1995. Six papers have more than three thousand citations and thirteen documents have

more than two thousand. Several authors of these papers have won the Nobel Prize in economics and in part thanks to the paper/s published in JPE.

A further interesting aspect is to identify who is giving citations to JPE. In order to do this, the analysis goes to the citation report of the Web of Science Core Collection and selects the results available in the "citing articles" option. Note that the work analyses the citing articles of documents published in JPE between 1967 and 2016. Table 2 shows the results.

Table 2. Citing articles of JPE (1967–2016)

R	Journal	TP	University	TP	Country	TP
1	American Econ Rev	3400	Harvard U	4141	USA	90164
2	Applied Econ	2515	Federal Reserve System USA	3775	UK	18982
3	J Political Economy	2100	U Chicago	3149	Canada	10392
4	Economics Letters	1965	U Pennsylvania	2879	Germany	10004
5	J Monetary Econ	1680	Stanford U	2580	PR China	9063
6	J Finance	1664	Columbia U	2505	France	6449
7	J Public Econ	1653	U California Berkeley	2437	Australia	6064
8	J Banking & Finance	1613	New York U	2279	Italy	5747
9	Rev Econ and Statistics	1586	London School Economics	2225	Spain	5526
10	European Econ Rev	1566	U North Carolina	2172	Netherlands	5153
11	J Econ Dynamics Control	1512	MIT	2134	Japan	3667
12	J Financial Econ	1456	U Michigan	2022	Sweden	2984
13	J Econ Behavior Organization	1444	Yale U	1854	Switzerland	2930
14	Econ J	1433	Northwestern U	1825	Taiwan	2762
15	J Money Credit and Banking	1340	U California Los Angeles	1782	Israel	2669
16	Public Choice	1299	Cornell U	1731	South Korea	2629
17	J Econ Theory	1256	The World Bank	1661	Belgium	2347
18	J Int Econ	1251	Princeton U	1595	Norway	1819
19	Econ Inquiry	1198	U Wisconsin Madison	1570	Denmark	1698
20	Quarterly J Econ	1189	U Oxford	1546	Singapore	1505
21	Econ Modelling	1170	U Minnesota Twin Cities	1509	Austria	1468
22	Canadian J Econ	1156	Duke U	1506	Turkey	1262
23	Int Econ Rev	1147	U Maryland College Park	1455	India	1209
24	American J Agricultural Econ	1145	U Toronto	1448	Portugal	1132
25	J Development Econ	1124	CNRS France	1448	Finland	1120
26	Rev Financial Studies	1060	IMF	1433	Greece	1117
27	Southern Econ J	1053	Ohio State U	1310	New Zealand	985
28	J Int Money and Finance	1052	Penn State U	1271	Brazil	955
29	J Macroeconomics	1039	U Illinois Urbana Champaign	1237	Czech Republic	834
30	Rev Econ Studies	1013	U British Columbia	1193	Ireland	781

Abbreviations: R = Rank; TP = Total papers.

The American Economic Review is the journal that cites more frequently the JPE. Applied Economics, Economics Letters and the self-citations of JPE are also significant in the list. All the journals are connected to economics and finance. From the institution point of view, Harvard is the university giving more citations to JPE followed by the Federal Reserve System of the USA and the University of Chicago. Note that these results depend significantly on the productivity. Therefore, universities and institutions that publish a lot tend to appear in higher positions in the ranking. At the country level, the USA is clearly the country giving more citations to JPE followed by the UK, Canada, Germany and China. Most of the countries are developed economies although developing countries are also improving a lot and some of them are already appearing on the list including Turkey, India and Brazil.

Another interesting issue is to analyse the results at the country level in order to see who is publishing in JPE worldwide. In order to do so, Table 3 presents the thirty most productive countries in JPE. Again the ranking is based on the number of papers and in the case of a tie according to the number of citations. Note that the table shows some additional indicators including the number of papers in periods of ten years between 1967 and 2016.

Most of the publications in JPE come from authors working at US institutions. English-speaking countries such as Canada, UK and Australia publish regularly in the journal although their numbers are very low even if normalizing per person. The only country standing at an equivalent publication level per person than the USA is Israel. The rest of the countries have published a very low number of papers in the journal. Particularly, it is worth noting that it is very uncommon to see developing countries publishing in the journal. Note that according to Figure 1, JPE has been decreasing the annual number of papers published in the journal. Therefore, most of the leading countries in JPE have decreased their number of papers through time.

Table 3. The most productive and influential countries in JPE

R	Country	TP	TC	H	C/P	D1	D2	D3	D4	D5
1	USA	2609	289104	244	111	806	598	504	414	287
2	Canada	192	11485	52	60	53	55	39	20	25
3	UK	184	14887	55	81	54	29	21	51	29
4	Israel	113	7660	42	68	32	43	17	11	10
5	Australia	41	1077	19	26	15	11	7	5	3
6	France	36	3014	22	84	2	3	4	15	12
7	Germany	29	622	12	21	5	3	1	5	15
8	Italy	27	2645	18	98	2	0	5	9	11
9	Sweden	27	1890	17	70	3	11	2	5	6
10	Spain	22	1032	14	47	0	0	5	8	9
11	Japan	22	738	14	34	9	2	5	3	3
12	PR China	19	1415	13	74	0	0	7	7	5
13	Netherlands	18	725	12	40	3	0	4	5	6
14	Norway	17	2918	14	172	4	1	1	5	6
15	India	17	999	10	59	12	1	2	1	1
16	Belgium	15	1233	11	82	4	1	0	8	2
17	Switzerland	14	690	9	49	1	4	1	1	7
18	Portugal	7	1436	7	205	0	0	4	1	2
19	Brazil	7	490	6	70	3	2	0	0	2
20	Taiwan	7	239	5	34	1	0	2	2	2
21	Singapore	6	306	5	51	2	0	0	2	2
22	Chile	5	223	4	45	2	0	0	2	1
23	South Korea	5	211	4	42	0	0	2	1	2
24	Mexico	4	236	3	59	1	0	0	2	1
25	Austria	4	187	2	47	1	1	1	0	1
26	Argentina	4	73	4	18	3	0	0	0	1
27	Finland	3	396	2	132	0	0	1	1	1
28	Ireland	3	118	2	39	0	1	1	0	1
29	Denmark	3	72	2	24	1	0	0	2	0
30	Greece	3	25	2	8	1	0	0	1	1

Abbreviations are available in previous tables except: H = *h*-index; C/P = Cites per paper; D1, D2, D3, D4,D5 = Number of documents published in 1967-1976, 1977-1986, 1987-1996, 1997-2006, and 2007-2016, respectively.

4. GRAPHICAL ANALYSIS OF JPE WITH VOS VIEWER

The results of the previous section provide some rankings based on specific criteria. But another interesting question is to analyse how the bibliographic data is connected between each other in order to identify similar profiles between the different variables. An alternative for doing this is by developing a graphical analysis [12]. This work uses the VOS viewer software in order to map the bibliographic information. Note that the software uses fractional counting when measuring the number of documents and citations. Therefore, each author of the paper gets a fraction of the paper instead of the whole unit. Observe that this is one of the current disadvantages of Web of Science because the database uses full counting, giving one unit to each participating institution. By using fractional counting in the software, the study partially solves this limitation by obtaining a different perspective of the results. Nevertheless, there are no significant deviations in the results.

First, let us look into co-citation of journals in JPE. That is, identification of the most cited journals in JPE and connect those that receive more citations from the same sources. Figure 2 presents the results for the publication in JPE between 1967 and 2016 by establishing a threshold of twenty citations and the one hundred strongest co-citation connections.

The self-citations of JPE are the most relevant ones followed by the citations given to American Economic Review, Econometrica and the Quarterly Journal of Economics. Most of the journals cited in JPE are connected to economics although some journals from other related fields do also appear on the graph including journals in finance, accounting, operations research and politics.

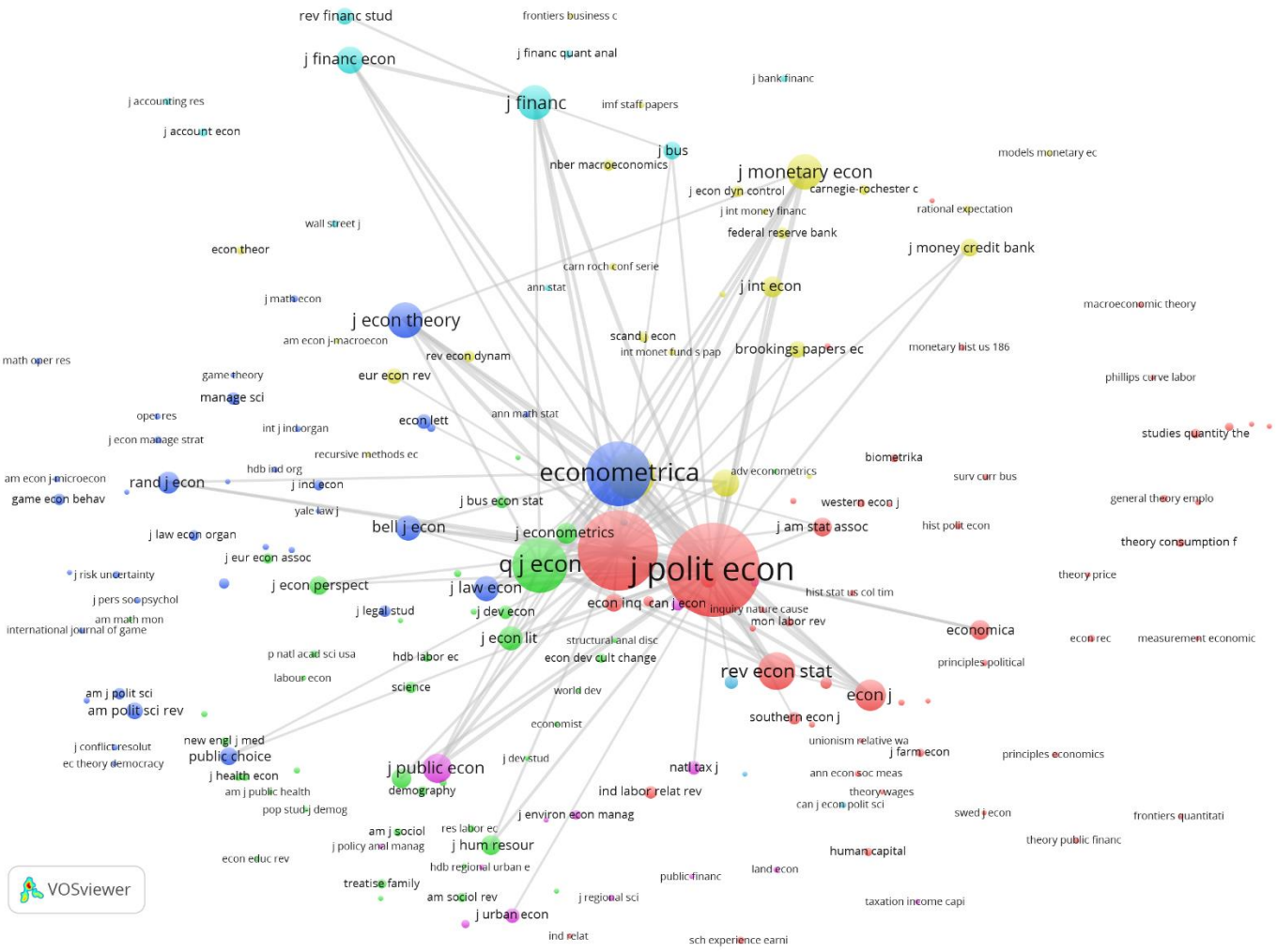

Figure 2. Co-citation of journals cited in JPE

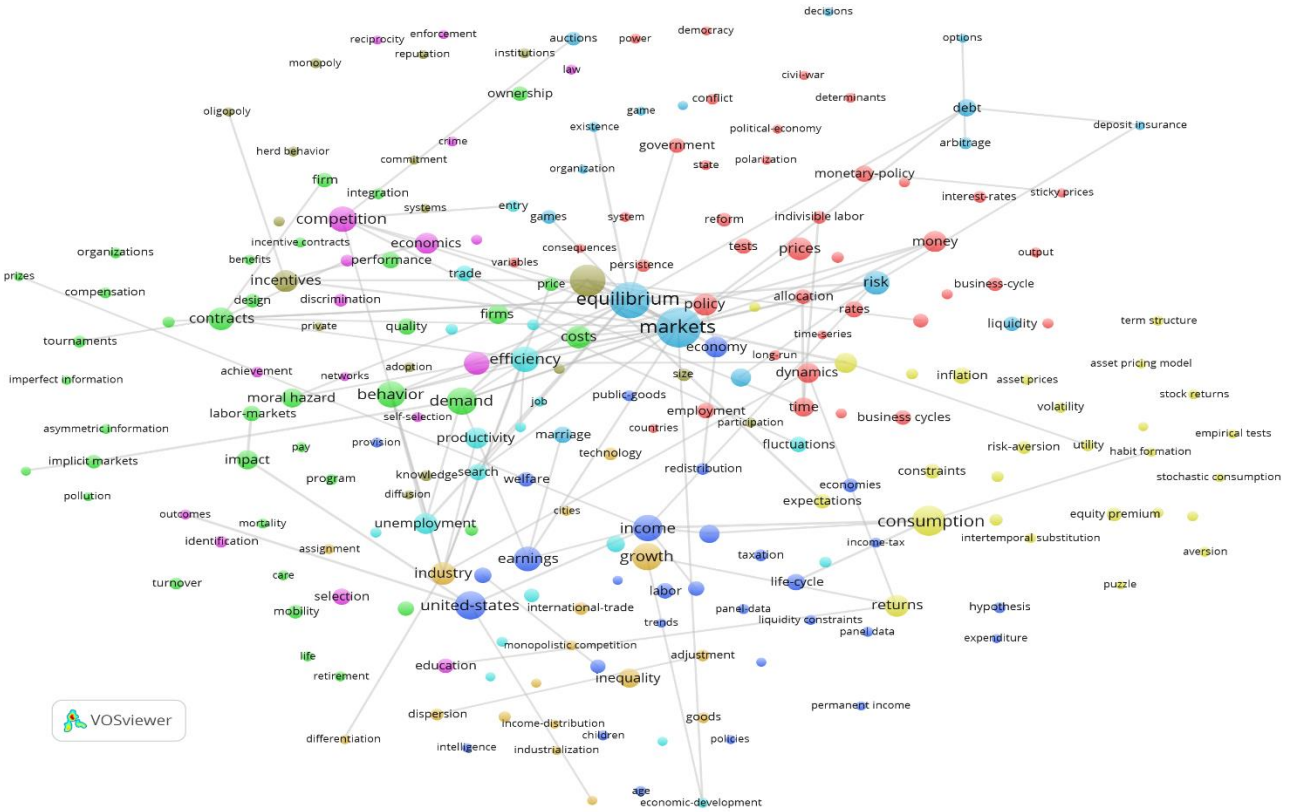

Figure 3. Co-occurrence of Web of Science Keyword Plus of documents published in JPE

Finally, let us analyse the most common keywords in JPE. Usually, with the software it is possible to analyse the author keywords of the papers [13]. However, JPE is a journal that does not use keywords in the title page. Therefore, in order to study the most common keywords of JPE, the work uses the Keyword Plus section of Web of Science Core Collection database. This section classifies all the papers in general keywords that are selected by some experts that handle the Web of Science database. By using this approach, the software develops a graphical map by analysing the co-occurrence of the Keyword Plus. That is, the most common keywords and those that appears more frequently in the same documents. Figure 3 shows the results considering a minimum threshold of five occurrences and the one hundred most frequent co-occurrence connections.

The most common keyword is "markets" followed by "equilibrium" and "information" that appear together in the map. Some other common keywords are "consumption", "United States", "growth" and "demand". The results of the figure indicate that JPE is a diverse journal publishing documents from a wide range of fields in economics. This is consistent with the aims and scope of the journal where JPE is qualified as a general economics journal.

5. CONCLUSIONS

This study provides a bibliometric overview of the publication and citation structure of JPE. The work is motivated due to the 125th anniversary of the journal in 2017. The analysis collects the information from the Web of Science Core Collection database and develops several rankings for different criteria including papers, authors, universities and countries. The aim is to identify the leading trends that are occurring in the journal over the last decades with a particular emphasis between 1967 and 2016. The work also uses the VOS viewer software in order to map graphically the bibliographical material by using co-citation, bibliographic coupling and co-occurrence of keywords.

The results show a strong dominance by the USA that currently publishes most of the papers of the journal. Therefore, it has the most productive and influential authors and institutions, and has published the majority of highly cited papers of JPE. This trend seems to continue in the future although the differences with other countries are reducing a bit. Nevertheless, note that the USA is a country that imports researchers and economists from all over the world. Therefore, there are many foreign economists working at US institutions and these authors are counted as the USA because they are working in the country.

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