

# Capture of the Academic Industrial Organization Literature

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# 1 The Production of Academic Articles

Between 1991 and 2020, the amount of space for articles in the Top 5 journals, the *American Economic Review* (AER), *Econometrica* (ECA), the *Journal of Political Economy* (JPE), the *Quarterly Journal of Economics* (QJE), and the *Review of Economic Studies* (RES) (and the *RAND Journal of Economics* (RJE)) has grown slowly and steadily. Notably, however the AER makes up some 40% of articles published in the Top 5, with almost double the number of articles that any other journal published in any given year.

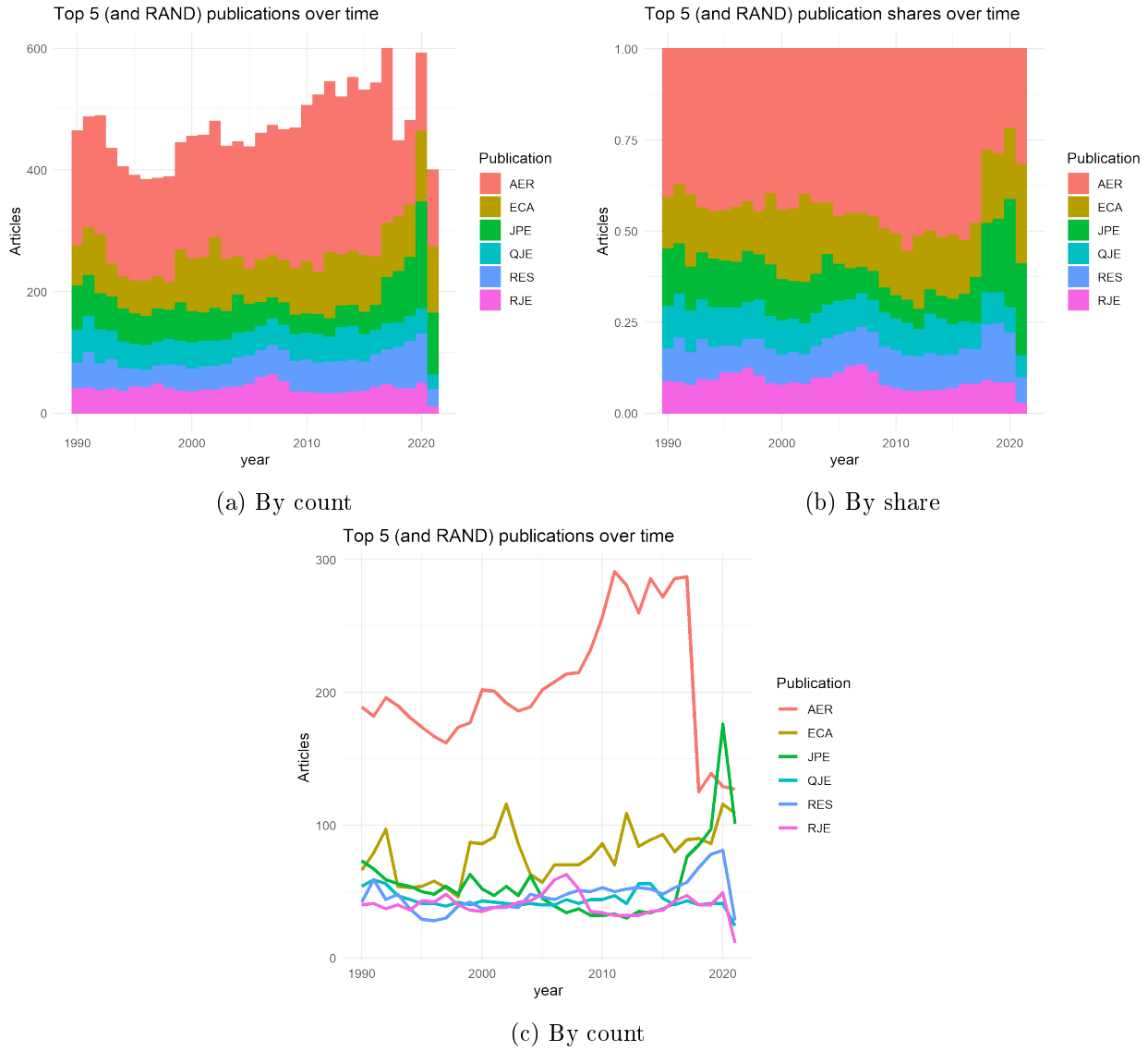


Figure 1: Annual publications in the Top 5 (and RAND)

Though there has been some fluctuation over time, the Top 5 (and RAND) collectively published between 390 and 600 articles per year, with an average of 471 publications per year between 1990 and 2021.<sup>1</sup> See Appendix A for a full table of annual publication figures.

We also consider the composition of topics published in Top 5 over time.<sup>2</sup> To assess this, we construct two measures of topics. First, we identify a “predominant” JEL code among those listed on a paper. For example, if a paper is published with five JEL codes — C53, E43, F31, F37, and G15 for instance — because there are two codes that begin with “F”, we identify the paper as an “International Economics” paper. Ties are resolved by random number generator. Using this measure, Figure 2 plots the distribution of topics over time.

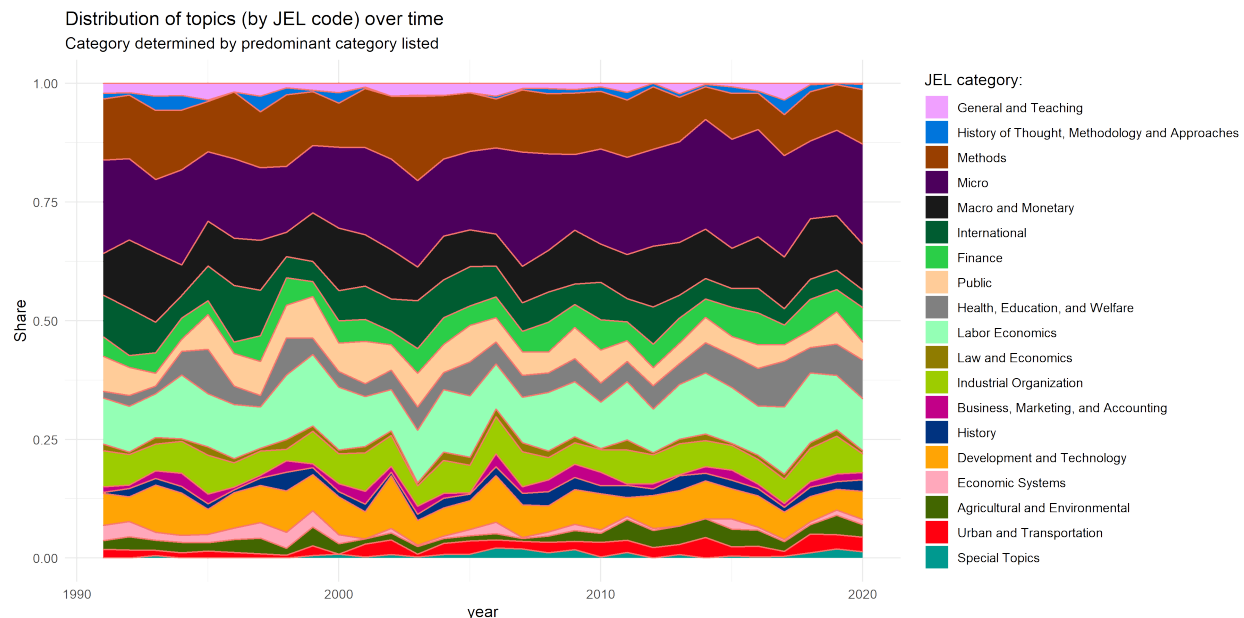


Figure 2: Topics in the Top 5 journals over time.

We also use a weighted-frequency approach to identify trends in topic publication over time. For this measure, using the same codes as above, such a paper would receive four JEL categorizations — “C,” “E,” “F,” and “G” each with weights commensurate with their within-paper frequency. That is, “F” would receive 40% weight, and the remaining codes would each receive 20% weights. These weights are then aggregated over each journal for each year. The results are presented below in Figure 3. When using this measure, we hereafter continue to use the terms “articles,” or “publications” for

<sup>1</sup>Note that 2021 may bias this average downwards as not all articles may have yet been indexed by EconLit. Observations from 1990 are also potentially misleading as that year marked a major for the JEL code format (from a decimal-numeric system to an alpha-numeric system). Because not all articles use a uniform categorization format we omit observations from this year. Hereafter, we trim all data to consider only the period from 1991 to 2020.

<sup>2</sup>In this instance we omit RAND because of its position as a field journal that is likely to have far less variation in topics published.

purposes of consistency. However, this measure more precisely refers to the number or share of particular JEL codes relative to all JEL codes published in the Top 5/the journal of interest.

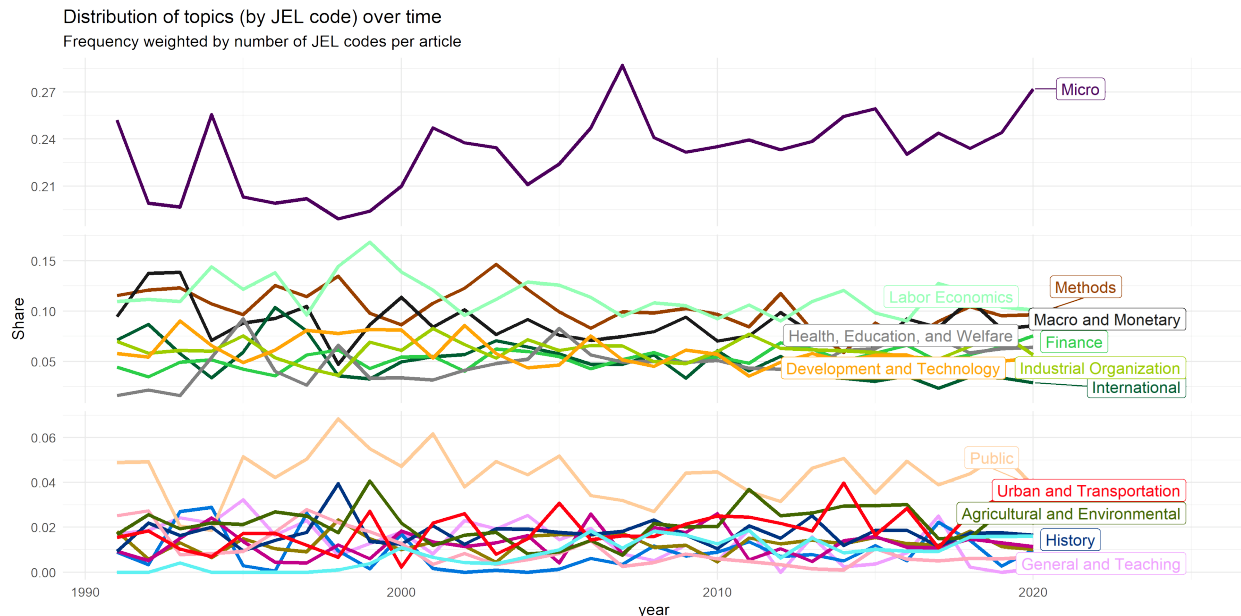


Figure 3: Topics in the Top 5 journals over time. N.B.: The vertical-axis has been broken twice in order to improve legibility by creating more space between series.

Throughout, the time series, papers in “Microeconomics” (D) have taken up an outsized share of Top 5 publications. There are some other topics that constitute a disproportionate share of publications, such as “Labor Economics” (J) and “Mathematical and Quantitative Methods” (CXX), but both such categories are on the order of half a magnitude smaller than microeconomics. In this time sample, “Industrial Organization” (L) papers constitute between 3% (in 1998) and 8% (in 2001) of Top 5 publications.

We then use the same measure to consider how topics are represented in each of the Top 5 journals. In Figure 4 below, similar trends as above are identifiable. Microeconomics is well represented in all of the Top 5 journals (though less so in the AER and QJE), as is Labor (with the exception of *Econometrica*). *Econometrica* stands out as being the least topic-diverse of the Top 5 journals, with its publications being much more focussed on quantitative methods topics and microeconomics than the other journals’ more general-interest profiles. As above, it is hard to identify clear trends in topic popularity over time. That is, *prima facie*, Industrial Organization appears to constitute a small part of the Top 5 literature, but not particularly so relative to other topics.<sup>3</sup>

<sup>3</sup>For an ordinal ranking of topics in each of the Top 5 journals for selected years, see Appendix A Table 2.

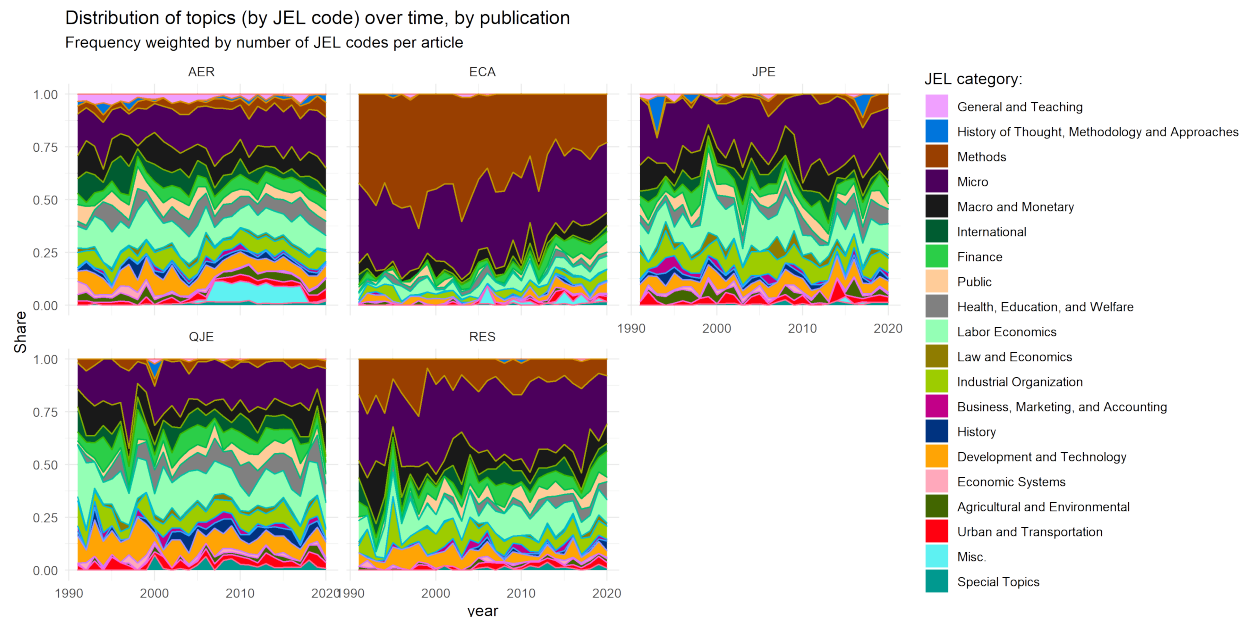


Figure 4: Topics in the Top 5 over time

## 2 The Role of Industrial Organization

We then consider how Industrial Organization (IO) papers have featured in the Top 5 and RAND over time. We consider a paper to be an “IO” publication if the article’s associated Journal of Economic Literature (JEL) codes contains *at least* one code that begins with “L,” hereafter regularly referred to as LXX. (JEL codes since 1990 have been a letter followed by two numbers, each indicating a greater degree of topic-specificity.) There are other JEL codes which could ostensibly be considered IO-related. These include K21 (Antitrust law), D4 (Market structure, pricing, and design), O3 (Innovation; research and development; technological change; intellectual property rights), and G34 (Mergers; acquisitions; restructuring; corporate governance). However, these are omitted at first to make comparisons across various topics/groups easier. Using this methodology, we identify 2,380 IO-related articles across the Top 5 (and RAND) between 1991 and 2020.

During the the period from 1990 to 2020, IO papers have made up, on average, approximately 16% of articles published in the Top 5 (and RAND). This share has grown steadily over time, with the greatest share of such articles having been published in 2020 (20.8%).<sup>4</sup> This pattern, however, is not agnostic pf journal. That is, the AER and QJE, publish lots of IO papers relative to, for example, *Econometrica*. Additionally, as is to be expected of a field journal, *RAND* regularly sees almost 40% its publications mention at least one LXX JEL code.<sup>5</sup>

<sup>4</sup>See Table 2 in Appendix B for a full table of annual IO share figures.

<sup>5</sup>For an annual breakdown of by-journal IO shares, please see Appendix B Table 4.

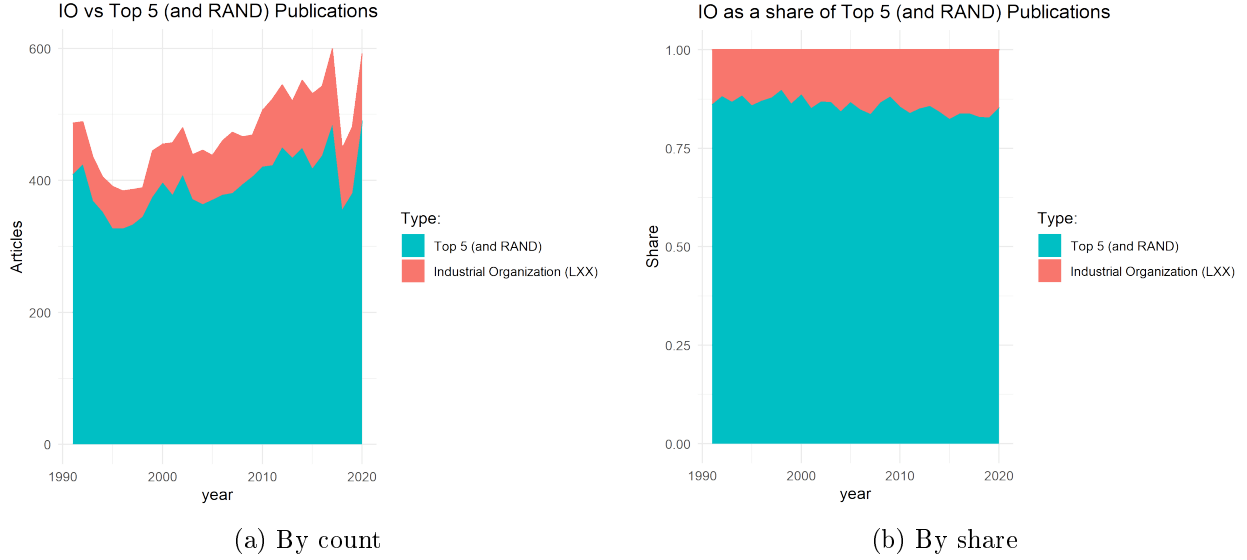


Figure 5: Industrial Organization in the Top 5 (and RAND)

Additionally, the inclusion of RAND may be misleading. As noted above, when excluding RAND, IO papers make up only between 3% and 8% of articles published in the Top 5 journals. Those shares appear to be in conflict with those plots presented below in Figure 5 (b), which, for many of the publications of interest, present significantly larger shares. However, recall that Figures 3 and 4 above presented the article-level *weighted* frequency of JEL codes, whereas Figure 6 the *absolute* frequency of LXX JEL codes. That is, the seemingly contradictory results of these two figures are reconcilable in the case that IO-related articles are frequently published with lots of other JEL codes also listed on the those articles (thereby reducing the weight afforded the LXX code in Figure 3).



Figure 6: Industrial Organization in the Top 5 (and RAND), by journal

### 3 The Role of Anti-Trust

Even within “L” Industrial Organization category, there are 10 classes of JEL codes that refer to topics from “Market structure, firm strategy and market performance” (L1) to “Industry studies: transportation and utilities” (L9). We are particularly interested in the papers published in the Top 5 (and RAND) that bear at least one L4 code, indicating that the paper pertains to “Antitrust issues and policies.”

As evidenced in Figures 7(a) and 7(b), antitrust (L4) makes up a *de minimis share* of even IO (LXX) papers, let alone the sample of papers published in the top journals, at large. Moreover, the number of IO publications in ECA, JPE, QJE, and RES are relatively small, and to the extent that antitrust papers do appear in the sample of journals we consider, they are highly concentrated in the *RAND Journal of Economics*. Between 1991 and 2021, we identify 103 articles that are associated with antitrust (L4), just over 4% of the IO-related (LXX) papers published in the Top 5 (and RAND) in the same period.

#### 3.1 Anti-Trust relative to Wages

The above result – that antitrust papers make up but a negligible share of articles published in the Top 5 (and RAND) – we consider comparing antitrust as a topic against another area of study that has considerable policy implications: wages and compensation. We do this to see if the sub-letter level of a JEL code is too specific to identify lines of literature in the Top 5. As demonstrated in Figure 9, the considerably larger share of the Top 5 (and RAND) articles identifiable

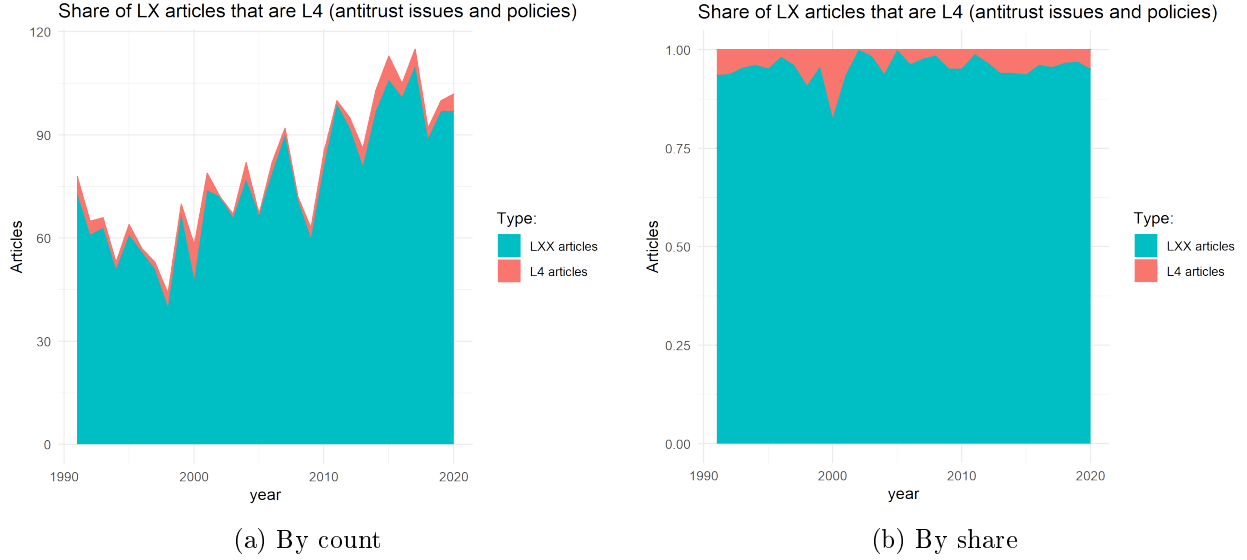


Figure 7: Antitrust within Industrial Organization in the Top 5 (and RAND)

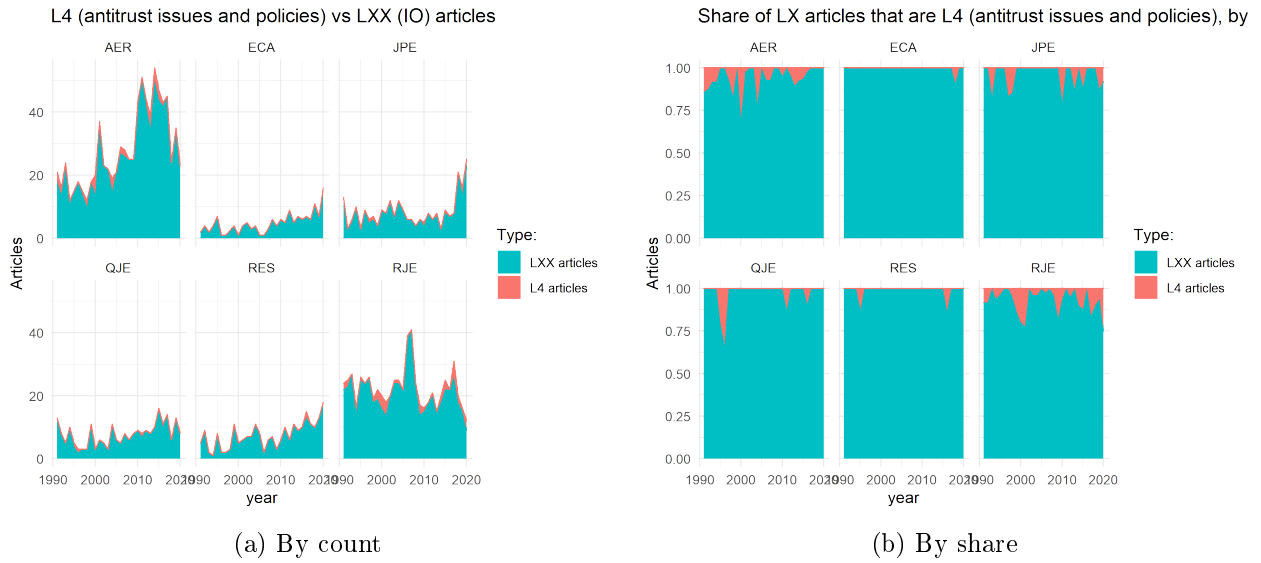


Figure 8: Antitrust within Industrial Organization in the Top 5 (and RAND), by journal

as being associated with wage studies (J3), suggests that there are strands of the literature that are identifiable with sub-letter JEL code policy areas. This again points to a dearth of antitrust papers in the most prestigious economics journals.



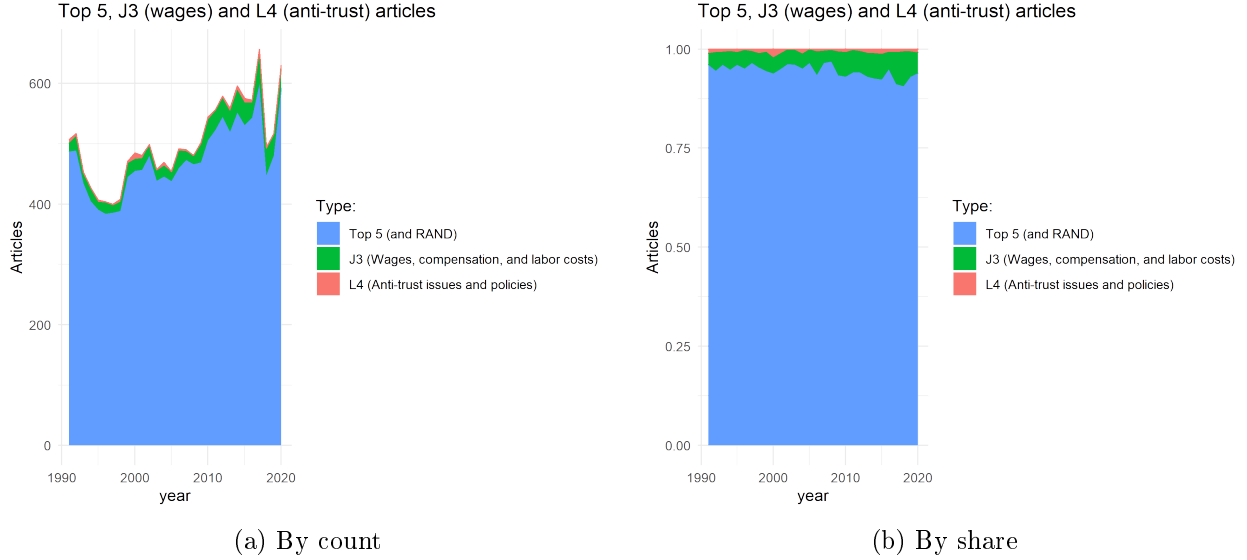


Figure 9: The relative frequencies of wage-studies (J3) and antitrust (L4) articles in the Top 5 (and RAND).

## A The Production of Academic Articles

Table 1 presents the count of articles published in each of the Top 5 Journals (and RAND) during the time period of interest: 1990 to 2021. As noted above, in subsequent tables and figures, we trim the time series to cover only 1990 to 2020 so as to avoid potential complications due to incomplete indexing and/or changing JEL code formats.

Table 2 presents the ordinal ranking of the top five JEL categories in each journal for selected years. In the case that Industrial Organization (L) is *not* one of the top 5 categories, it and its ordinal ranking in that journal-year are given as a sixth entry. Note that when creating this ordinal ranking the *weighted* frequencies of JEL codes are used.

Table 1: Number of articles published in each of the Top 5 (and RAND), year

	AER	ECA	JPE	QJE	RES	RJE	TOTAL
1990	189	66	73	54	42	40	464
1991	182	79	67	59	59	41	487
1992	196	97	59	56	44	37	489
1993	190	54	56	47	48	40	435
1994	181	53	54	44	37	36	405
1995	174	54	50	41	29	43	391
1996	167	58	48	41	28	42	384
1997	162	53	54	39	30	48	386
1998	174	46	48	42	39	40	389
1999	177	87	63	40	42	36	445
2000	202	86	52	43	37	35	455
2001	201	91	47	42	38	38	457
2002	192	116	54	41	39	38	480
2003	186	86	47	40	38	42	439
2004	189	63	62	41	48	43	446
2005	202	57	45	40	46	48	438
2006	208	70	39	40	44	59	460
2007	214	70	34	44	48	63	473
2008	215	70	37	41	51	52	466
2009	232	76	32	44	50	35	469
2010	257	86	32	44	53	34	506
2011	291	70	33	47	50	32	523
2012	281	109	30	41	52	32	545
2013	260	84	35	56	53	32	520
2014	286	89	34	56	52	35	552
2015	272	93	37	45	48	36	531
2016	286	80	41	40	53	43	543
2017	287	89	76	43	57	47	599
2018	125	90	85	40	68	40	448
2019	139	86	97	41	78	40	481
2020	129	116	176	41	81	49	592
2021	127	109	101	24	28	11	400

Table 2: Ordinal ranking of most frequently (weighted) appearing JEL codes in the Top 5 for selected years

Publication : <i>American Economic Review</i>						
1991	1995	2000	2005	2010	2015	2020
1. D: Micro 2. E: Macro and Monetary 3. J: Labor Economics 4. H: Public 5. L: Industrial Organization	1. J: Labor Economics 2. D: Micro 3. I: Health, Education, and Welfare 4. E: Macro and Monetary 5. F: International 7. L: Industrial Organization	1. J: Labor Economics 2. E: Macro and Monetary 3. D: Micro 4. O: Development and Technology 5. F: International 6. L: Industrial Organization	1. D: Micro 2. J: Labor Economics 3. I: Health, Education, and Welfare 4. E: Macro and Monetary 5. F: International 7. L: Industrial Organization	1. D: Micro 2. Y: Misc. 3. E: Macro and Monetary 4. J: Labor Economics 5. F: International 7. L: Industrial Organization	1. D: Micro 2. J: Labor Economics 3. Y: Misc. 4. E: Macro and Monetary 5. I: Health, Education, and Welfare 7. L: Industrial Organization	1. D: Micro 2. E: Macro and Monetary 3. C: Methods 4. I: Health, Education, and Welfare 5. J: Labor Economics 11. L: Industrial Organization
Publication : <i>Econometrica</i>						
1991	1995	2000	2005	2010	2015	2020
1. C: Methods 2. D: Micro 3. E: Macro and Monetary 4. F: International 5. J: Labor Economics 7. L: Industrial Organization	1. C: Methods 2. D: Micro 3. L: Industrial Organization 4. I: Health, Education, and Welfare 5. H: Public	1. C: Methods 2. D: Micro 3. E: Macro and Monetary 4. G: Finance 5. O: Development and Technology 7. L: Industrial Organization	1. C: Methods 2. D: Micro 3. E: Macro and Monetary 4. J: Labor Economics 5. I: Health, Education, and Welfare 10. L: Industrial Organization	1. D: Micro 2. C: Methods 3. J: Labor Economics 4. L: Industrial Organization 5. G: Finance	1. D: Micro 2. C: Methods 3. Y: Misc. 4. J: Labor Economics 5. G: Finance 9. L: Industrial Organization	1. D: Micro 2. C: Methods 3. J: Labor Economics 4. E: Macro and Monetary 5. O: Development and Technology 6. L: Industrial Organization
Publication : <i>Journal of Political Economy</i>						
1991	1995	2000	2005	2010	2015	2020
1. D: Micro 2. L: Industrial Organization 3. E: Macro and Monetary 4. J: Labor Economics 5. O: Development and Technology	1. D: Micro 2. O: Development and Technology 3. I: Health, Education, and Welfare 4. J: Labor Economics 5. H: Public 11. L: Industrial Organization	1. D: Micro 2. J: Labor Economics 3. L: Industrial Organization 4. G: Finance 5. O: Development and Technology	1. D: Micro 2. J: Labor Economics 3. L: Industrial Organization 4. E: Macro and Monetary 5. F: International	1. D: Micro 2. J: Labor Economics 3. I: Health, Education, and Welfare 4. O: Development and Technology 5. L: Industrial Organization	1. D: Micro 2. I: Health, Education, and Welfare 3. J: Labor Economics 4. L: Industrial Organization 5. E: Macro and Monetary	1. D: Micro 2. J: Labor Economics 3. G: Finance 4. I: Health, Education, and Welfare 5. L: Industrial Organization
Publication : <i>Quarterly Journal of Economics</i>						
1991	1995	2000	2005	2010	2015	2020
1. J: Labor Economics 2. O: Development and Technology 3. D: Micro 4. L: Industrial Organization 5. F: International	1. D: Micro 2. E: Macro and Monetary 3. J: Labor Economics 4. O: Development and Technology 5. L: Industrial Organization	1. D: Micro 2. I: Health, Education, and Welfare 3. J: Labor Economics 4. E: Macro and Monetary 5. Z: Special Topics 9. L: Industrial Organization	1. D: Micro 2. J: Labor Economics 3. O: Development and Technology 4. G: Finance 5. L: Industrial Organization	1. D: Micro 2. J: Labor Economics 3. I: Health, Education, and Welfare 4. F: International 5. G: Finance 7. L: Industrial Organization	1. D: Micro 2. J: Labor Economics 3. L: Industrial Organization 4. I: Health, Education, and Welfare 5. O: Development and Technology	1. D: Micro 2. E: Macro and Monetary 3. J: Labor Economics 4. I: Health, Education, and Welfare 5. O: Development and Technology 8. L: Industrial Organization
Publication : <i>Review of Economic Studies</i>						
1991	1995	2000	2005	2010	2015	2020
1. D: Micro 2. C: Methods 3. F: International 4. J: Labor Economics 5. E: Macro and Monetary 8. L: Industrial Organization	1. D: Micro 2. L: Industrial Organization 3. J: Labor Economics 4. G: Finance 5. C: Methods	1. D: Micro 2. C: Methods 3. J: Labor Economics 4. L: Industrial Organization 5. H: Public	1. D: Micro 2. C: Methods 3. E: Macro and Monetary 4. L: Industrial Organization 5. G: Finance	1. D: Micro 2. C: Methods 3. J: Labor Economics 4. H: Public 5. E: Macro and Monetary 7. L: Industrial Organization	1. D: Micro 2. J: Labor Economics 3. F: International 4. C: Methods 5. G: Finance 7. L: Industrial Organization	1. D: Micro 2. G: Finance 3. J: Labor Economics 4. E: Macro and Monetary 5. I: Health, Education, and Welfare 7. L: Industrial Organization

## B The Role of Industrial Organization

Tables 3 and 4 present the count and share of Industrial Organization articles in the Top 5 (and RAND), by year. Whereas Table 3 presents the IO count and share aggregated over all of the journals, by year, Table 4 presents the count of all articles published and the share of those that are IO-related, for each journal, by year. Note that for both Tables 3 and 4, the IO Share figures are calculated using the *absolute* frequencies NOT the weighted frequencies.

Table 3: The count and share of Industrial Organization articles in the Top 5 (and RAND), by year

	IO (LXX)	Top 5 (and RAND)	IO Share
1991	78	487	16.0%
1992	65	489	13.3%
1993	66	435	15.2%
1994	53	405	13.1%
1995	64	391	16.4%
1996	57	384	14.8%
1997	53	386	13.7%
1998	44	389	11.3%
1999	70	445	15.7%
2000	58	455	12.7%
2001	79	457	17.3%
2002	72	480	15.0%
2003	67	439	15.3%
2004	82	446	18.4%
2005	67	438	15.3%
2006	82	460	17.8%
2007	92	473	19.5%
2008	72	466	15.5%
2009	63	469	13.4%
2010	85	506	16.8%
2011	100	523	19.1%
2012	95	545	17.4%
2013	86	520	16.5%
2014	103	552	18.7%
2015	113	531	21.3%
2016	105	543	19.3%
2017	115	599	19.2%
2018	92	448	20.5%
2019	100	481	20.8%
2020	102	592	17.2%

Table 4: Share of publications that are IO-related, by year

	<i>AER</i>		<i>ECA</i>		<i>JPE</i>		<i>QJE</i>		<i>RES</i>		<i>RJE</i>	
	Count	IO Share	Count	IO Share	Count	IO Share	Count	IO Share	Count	IO Share	Count	IO Share
1991	182	11.54%	79	2.53%	67	19.40%	59	22.03%	59	8.47%	41	58.54%
1992	196	8.16%	97	4.12%	59	5.08%	56	14.29%	44	20.45%	37	67.57%
1993	190	12.63%	54	3.70%	56	10.71%	47	10.64%	48	4.17%	40	67.50%
1994	181	6.63%	53	7.55%	54	18.52%	44	22.73%	37	2.70%	36	44.44%
1995	174	8.62%	54	12.96%	50	6.00%	41	12.20%	29	27.59%	43	60.47%
1996	167	10.78%	58	1.72%	48	18.75%	41	7.32%	28	7.14%	42	57.14%
1997	162	9.26%	53	1.89%	54	11.11%	39	7.69%	30	6.67%	48	54.17%
1998	174	6.90%	46	0.00%	48	14.58%	42	7.14%	39	7.69%	40	47.50%
1999	177	10.17%	87	4.60%	63	6.35%	40	27.50%	42	26.19%	36	61.11%
2000	202	9.90%	86	1.16%	52	17.31%	43	6.98%	37	13.51%	35	57.14%
2001	201	18.41%	91	4.40%	47	17.02%	42	14.29%	38	15.79%	38	47.37%
2002	192	11.98%	116	4.31%	54	22.22%	41	12.20%	39	17.95%	38	52.63%
2003	186	11.83%	86	3.49%	47	14.89%	40	7.50%	38	18.42%	42	59.52%
2004	189	10.05%	63	6.35%	62	19.35%	41	26.83%	48	22.92%	43	58.14%
2005	202	10.40%	57	1.75%	45	20.00%	40	15.00%	46	17.39%	48	45.83%
2006	208	13.94%	70	1.43%	39	15.38%	40	12.50%	44	4.55%	59	66.10%
2007	214	13.08%	70	4.29%	34	17.65%	44	18.18%	48	12.50%	63	65.08%
2008	215	11.63%	70	8.57%	37	10.81%	41	14.63%	51	13.73%	52	46.15%
2009	232	10.78%	76	5.26%	32	18.75%	44	18.18%	50	6.00%	35	48.57%
2010	257	16.73%	86	6.98%	32	15.62%	44	20.45%	53	11.32%	34	47.06%
2011	291	17.53%	70	7.14%	33	24.24%	47	17.02%	50	20.00%	32	56.25%
2012	281	15.66%	109	8.26%	30	20.00%	41	21.95%	52	11.54%	32	65.62%
2013	260	15.00%	84	5.95%	35	22.86%	56	14.29%	53	20.75%	32	46.88%
2014	286	18.88%	89	7.87%	34	8.82%	56	17.86%	52	17.31%	35	57.14%
2015	272	17.28%	93	6.45%	37	24.32%	45	35.56%	48	20.83%	36	69.44%
2016	286	15.03%	80	8.75%	41	17.07%	40	27.50%	53	28.30%	43	51.16%
2017	287	15.68%	89	6.74%	76	10.53%	43	32.56%	57	19.30%	47	65.96%
2018	125	19.20%	90	12.22%	85	24.71%	40	15.00%	68	14.71%	40	50.00%
2019	139	25.18%	86	8.14%	97	16.49%	41	31.71%	78	16.67%	40	40.00%
2020	129	17.83%	116	13.79%	176	14.20%	41	19.51%	81	22.22%	49	24.49%

## C Miscellaneous

We additionally try to investigate the frequency of antitrust or related IO topics in the Top 5 (and RAND) by naively examining the abstracts of those papers. A paper is counted if a pattern of interest is matched in the abstract. We use open-ended patterns wherever possible to maximize the chances of identify a match. For example, we construct the monopoly pattern as “monopol” so that a regex match would be identified not only for “monopoly” but also for “monopolization.” The results of this effort are presented in Table 5.

Table 5: Appearance of miscellaneous terms in article abstracts, by journal

Publication	<i>Abstract contains:</i>						<i>JEL Code</i>			
	Anti Trust	Market Power	Anti Competitive	Monopoly	Merger	Cartel	L	K	L4	K21
AER	11	25	6	52	30	15	869	216	43	24
ECA	1	8	1	22	4	3	154	20	1	7
JPE	5	16	1	27	7	5	279	78	12	7
QJE	1	12	1	25	8	0	239	60	4	0
RES	2	9	1	52	5	2	228	39	3	1
RJE	21	37	13	113	48	16	679	87	43	15
TOTAL	41	107	23	291	102	41	2448	500	106	54