

Charting the Course of Diversity and Academic Accomplishment in the "Top Five" of Economics

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ABSTRACT

This research project investigates the diversity of the editorial boards of the top five economics journals – namely, the The American Economic Review, Econometrica, the Journal of Political Economy, the Quarterly Journal of Economics, and the Review of Economic Studies, also known as the “Top Five”. The project also discusses the relative diversity between editorial boards and the authors that are published in each journal. While diversity in academic economics has been studied previously, specific analysis of the “Top Five” has not yet been conducted. Therefore, the “Top Five” present a unique opportunity for research. By analyzing gender, race, institutional affiliation, number of papers published, and number of citations received, this project aims to address the ongoing issue of underrepresentation of social minorities in academic economics and examine the levels of academic accomplishment achieved by authors and editors respectively. Editorial board data was gathered from the Front Matters documents of each journal; author data, as well as supplementary data on editors, was obtained from the Microsoft Academic Graph (MAG). Our findings indicate that white, male, and top-ranked affiliated academics are overrepresented among both the authors and editors of the “Top Five”, indicating a need for continued action to increase the participation of social minorities at all levels of the academic hierarchy within the field of economics. However, this research project found no significant difference between the number of papers published and number of citations received by authors and editors, suggesting that editors are not always more prolific academics than authors.

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KEYWORDS

computational social science, “Top Five”, diversity, academic accomplishments, leaky pipeline

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1 INTRODUCTION

The “Top Five” in economics are a collection of journals, namely the 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). Publication in one of these journals is incredibly impactful in an economist’s academic career; a publication in the “Top Five” can be the difference between achieving a tenure-track position or otherwise. Hence, given their outsized influence within the field of academic economics, these journals present a unique opportunity for study.

The “pipeline” in academia is described as the lifetime of an academic’s career, including the years of training and education that they receive before becoming formally tenured [5]. The “leaky pipeline” describes a phenomenon wherein fewer women are found at higher rungs of the academic ladder. This is due to a myriad of reasons, such as how women form their career expectations and aspirations, how career development influences women’s experiences within the pipeline, and other factors both within and external to the field of academia. We posit that the phenomenon of the leaky pipeline applies not only to women but also to other social minorities within academia. These minorities may be delineated by various factors, such as race or institutional affiliation. As such, a survey of diversity based on these factors may help to illuminate the need for action or policy changes to plug the metaphorical leaky pipeline.

In light of this, this project examines the diversity of editorial boards belonging to the “Top Five”, as well as a comparison to the diversity of authors published in these journals. Our proposed hypothesis is that **the editorial boards**

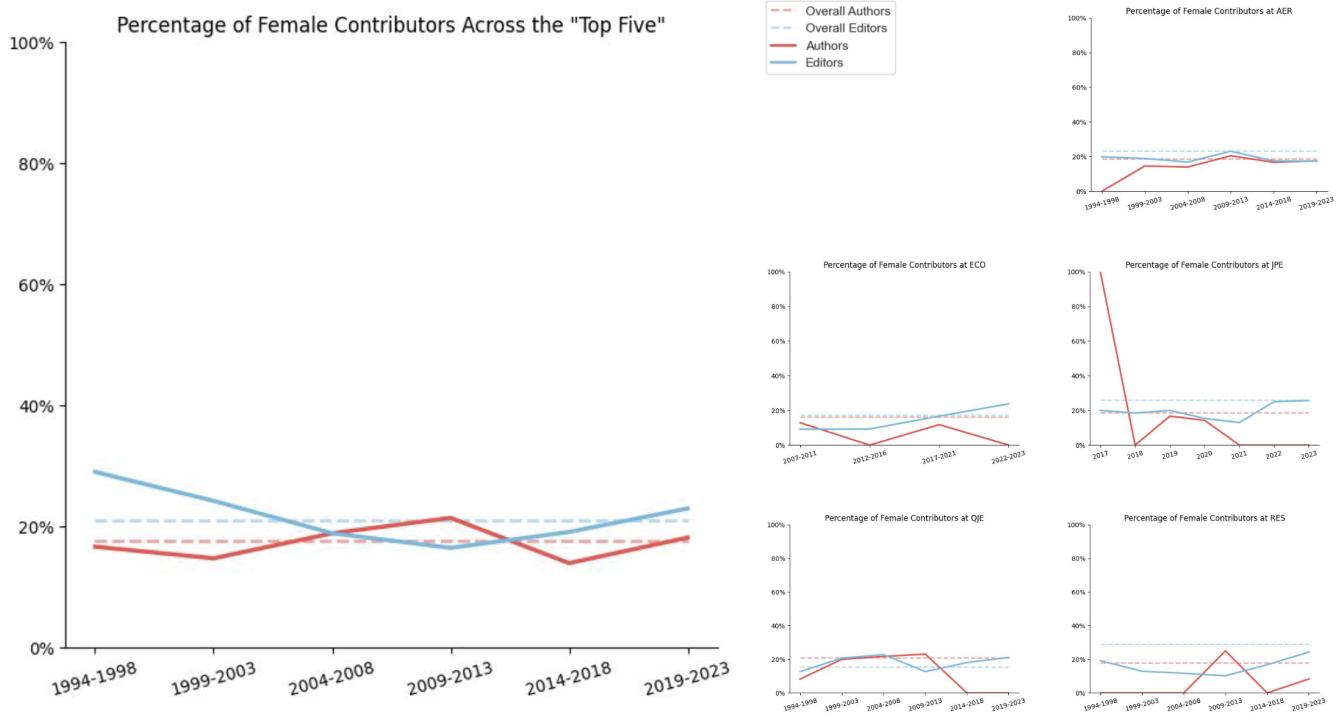


Figure 1: Percentage of Female Contributors Across the "Top Five" and Breakdown by Journal

of these journals tend to be less diverse than the authors they publish, in keeping with the theory of the leaky pipeline. To operationally define “diversity”, the project analyses the following measures: gender, race, and institutional affiliation ranking.

As a secondary hypothesis, we suggest that **editors, who are higher up the academic pipeline, tend to be more accomplished than authors**. To operationally define academic accomplishment, we measure the number of papers published and number of citations received by each contributor. For authors, these metrics are recorded up to the year of their publication in a given “Top Five” journal. For editors, these metrics are recorded up to the final year of their service on a “Top Five” journal’s editorial board.

In summary, this research project will examine hypotheses stating that editorial boards will be less diverse than authors, and editors will be more accomplished than authors.

2 RELATED WORK

Heckman and Sidarth found that a publication in one of the “Top Five” has a powerful impact on tenure decisions and rates of transition to tenure, and thus can significantly influence an academic’s career [6]. This was achieved through a statistical analysis of employment histories of economists

hired by the top thirty-five economics departments in the U.S., as well as a survey of attitudes towards the “top five” among young economists. In an analysis of top journals in economics, Card and DellaVigna also acknowledged the phenomenon of the “Top Five”, and indeed used these journals as a sample for their study [3].

Existing studies discuss editorial geographic and racial diversity across several fields. García-Carpintero et al. studied 281 journals across 15 disciplines, with 10,055 editorial board members identified [4]. They found a significant correlation between the representation of a given nation on the editorial board of a journal and the degree to which authors of that nationality were published in the journal. Beyond this, there was also a correlation between the number of journals edited in a country and the representation of that country on the editorial boards examined by this study. Notably, only two out of those journals used a double-blind review process, with the rest either using a single-blind process or providing no information in this regard.

With respect to gender, Addis & Villa surveyed the editorial boards of 36 Italian economics journals [1]. They found that the increase of women in economics did not lead to a corresponding increase in the number of women on editorial boards. Furthermore, even when present on editorial boards,

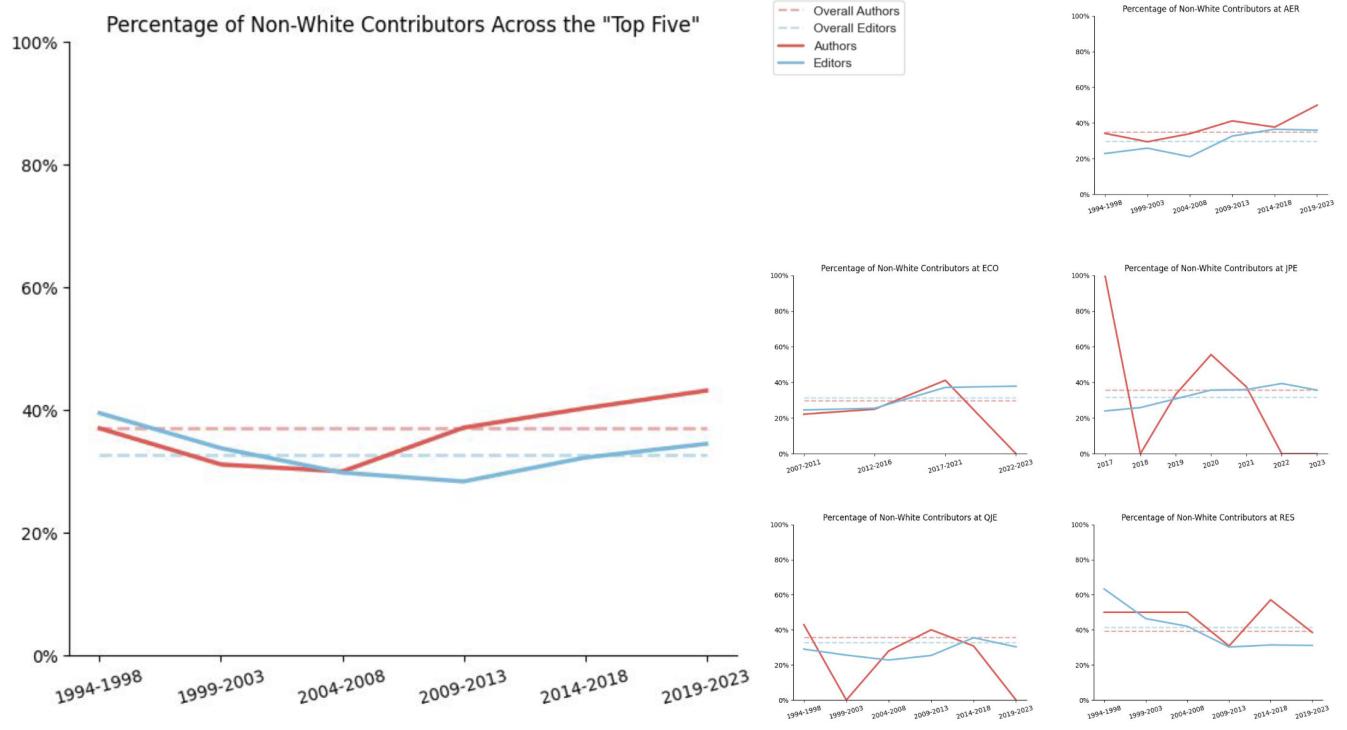


Figure 2: Percentage of Non-White Contributors Across the "Top Five" and Breakdown by Journal

women tended to occupy lower positions on the hierarchical order of the board. Only five out of the 36 journals studied included women at a level equal to their representation within the field as a whole. This was found to occur despite the increase of women not only in the academic field of economics as a whole, but also the increase of women in positions of high academic standing.

In the field of management, Metz & Harzing also study gender distribution of editorial boards and its relationship to the gender of editors [7]. Data was gathered for 52 journals in management across North America and Europe, with longitudinal data collected in five-year intervals beginning in 1989. The study found that editors who showed higher academic performance, had a younger professional age, and were female were correlated with more gender-equal editorial boards. The results of this study indicated an almost 10% difference in the gender composition of the editorial boards that were studied as a function of the editor's characteristics discussed above.

Although the topic of diversity in academia has been studied previously, specific analysis of the "Top Five" journals we mention has not been conducted. This gap in analysis is salient because these journals have an outsized impact on economists' careers. Therefore, this project will present

novel contributions by analyzing the boards of the "Top Five" and discussing diversity across numerous metrics such as institutional affiliation and race as well as analysing academic accomplishment through number of papers published and number of citations received. More broadly, it also seems that the relationship between the diversity of journals' editorial boards and that of the academics published therein has not been extensively studied, thereby presenting a valuable opportunity for research.

3 METHODOLOGY

3.1 Data Collection and Cleaning

Author data was collected from the Microsoft Academic Graph, which records the journal each paper was published in under a unique journal ID. The project team collected all papers published in the "Top Five" by filtering for each journal's unique ID. Following this, each paper was matched to its authors based on a collection of paper-author affiliations, also provided in the Microsoft Academic Graph.

To collect editorial board data from each of the "Top Five", a combination of web scraping and manual techniques was used to retrieve .pdf files of each journal's Front Matters documents. In order to capture the data at an appropriate granularity, the Front Matters document of the first issue of

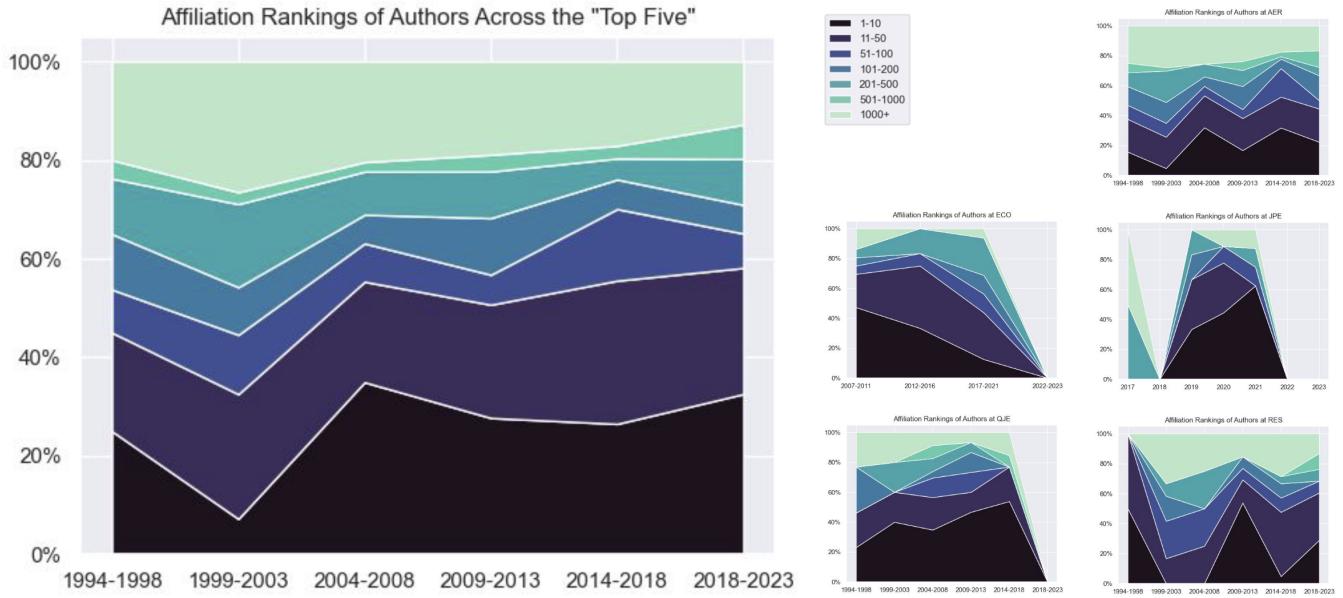


Figure 3: Affiliation Rankings of Authors Across the "Top Five" and Breakdown by Journal

each year was collected. Following this, RegEx (regular expression) filtering techniques were applied to the .pdf files to extract data about the journal's editorial board for each Front Matters document. These techniques were also combined with manual data cleaning where necessary. Data obtainable from the Front Matters documents generally comprised the name and tenure of each editorial board member, as well as the institutional affiliation of some board members. From this data, the project team constructed a dataset consisting of editorial tenures at each journal, with supporting information including the start and end dates each editor's tenure as well as their institutional affiliation where available. Following this, the editors were matched to author entities in the Microsoft Academic Graph based on their full names.

3.2 Editor-Author Disambiguation

On some occasions, editors in the dataset were matched to more than one author in the Microsoft Academic Graph. To facilitate the process of disambiguating these author entities, the project team assumed that journal editors are prolific academics, and will have published at least one paper before becoming an editor. Subsequently, the following disambiguation process was applied to obtain one author entity match for each editor in the dataset:

- All author entities with only one paper published were filtered out. The Microsoft Academic Graph has a tendency to under-conflate entities, resulting in numerous author entities associated with a single paper.

- For all editors that were still associated with more than one author entity, a random entity was sampled as a match.

3.3 Gender and Race Classification

To aid in the examination of diversity metrics in relation to our first hypothesis, additional information about gender for both authors and editors was added using classifications obtained from *Genderize.io*. Only entries with confidence scores at or above 0.90 were considered. Race classifications were obtained from *Namsor.app*, which classifies names into four races based on the U.S. Census taxonomy: White non-Latino, Hispanic and Latino, Black non-Latino, and Asian.

3.4 Paper and Citation Count Calculations

The number of papers published by an academic, as well as the number of citations they receive, are examined in relation to this project's second hypothesis. While the Microsoft Academic Graph does contain fields that track the paper and citation counts for each author in its database, these fields are current to the date at which the Graph was last updated. In order to represent the paper and citation count of contributors more accurately, these metrics were calculated up to the year of each author's publication date and each editor's end of tenure at a given journal. To obtain the number of papers published by each contributor, the project team gathered all papers attributed to each author or editor entity from the Microsoft Academic Graph (P_1), then filtered by the end date

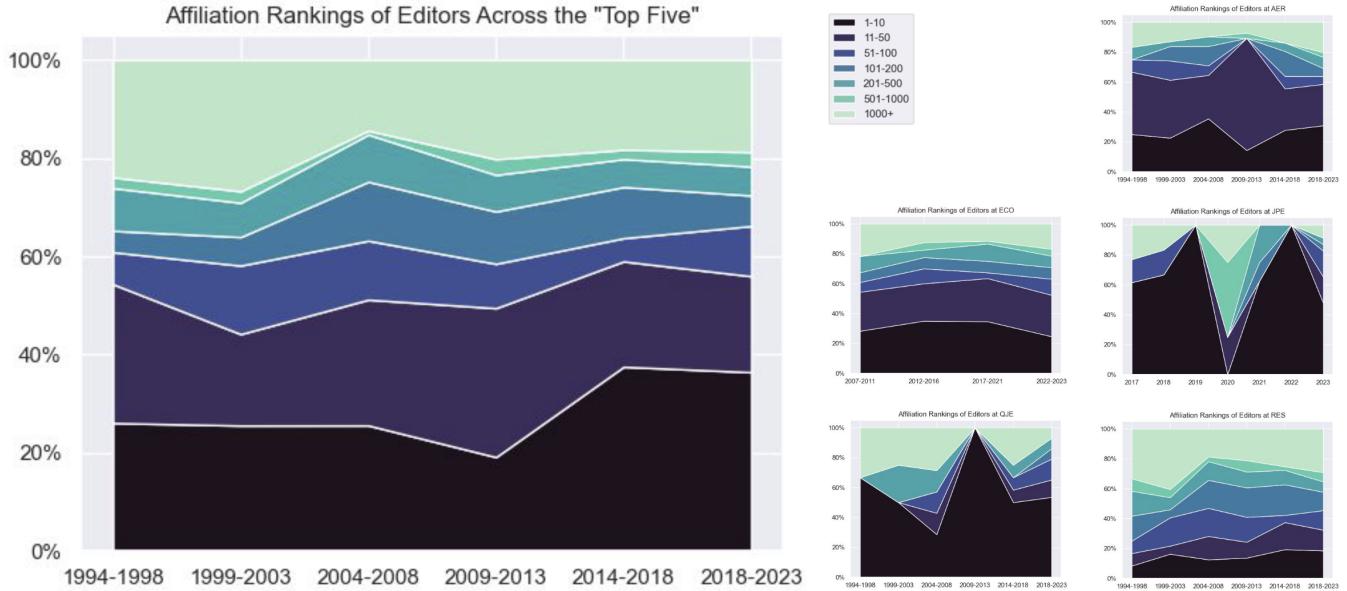


Figure 4: Affiliation Rankings of Editors Across the "Top Five" and Breakdown by Journal

of their contribution to the journal. To obtain the number of citations received, the project team then gathered all papers that referenced papers in P_1 and filtered out papers written after the end date of an author or editor's contribution to a given journal.

4 RESULTS

4.1 Gender

As indicated by Figure 1, women are underrepresented at each of the “Top Five” journals. The average percentage of editors who are women across the entire period examined by this research project is 21.1%; the average percentage of authors who are women is 17.6%. In none of the 5-year intervals studied did the percentage of women contributors exceed 30%. This finding is reflected in the individual journal breakdowns provided in Figure 1, as well as in Table 1. Although there are extreme values – for example, the percentage of women authors at the Journal of Political Economy is 100% in 2017 – these values are the result of a single available data point and are not representative of the overall result.

4.2 Race

Similarly, Figure 2 indicates that non-white (i.e. Hispanic and Latino, Black non-Latino, and Asian) academics are underrepresented across the “Top Five”. The average percentage of non-white editors at the “Top Five” between 1994 and 2023 is 32.7%. Non-white authors make up 37.0% of authors

Journal	Female Authors	Female Editors
AER	18.7%	23.4%
ECO	16.2%	17.5%
JPE	18.7%	25.9%
QJE	20.9%	15.6%
RES	18.0%	29.1%

Table 1: Average Percentage of Female Contributors by Journal

Journal	Non-White Authors	Non-White Editors
AER	35.0%	29.9%
ECO	29.9%	31.5%
JPE	35.7%	31.6%
QJE	35.8%	32.8%
RES	39.3%	41.5%

Table 2: Average Percentage of Non-White Contributors by Journal

published in these journals on average, with the percentage of non-white authors rising to 43.2% between 2019 and 2023. Again, this result is supported by analysis of each individual journal as well as in Table 2; though extreme values exist in some years or time periods, this is also a result of data sparseness, especially when it comes to author data.

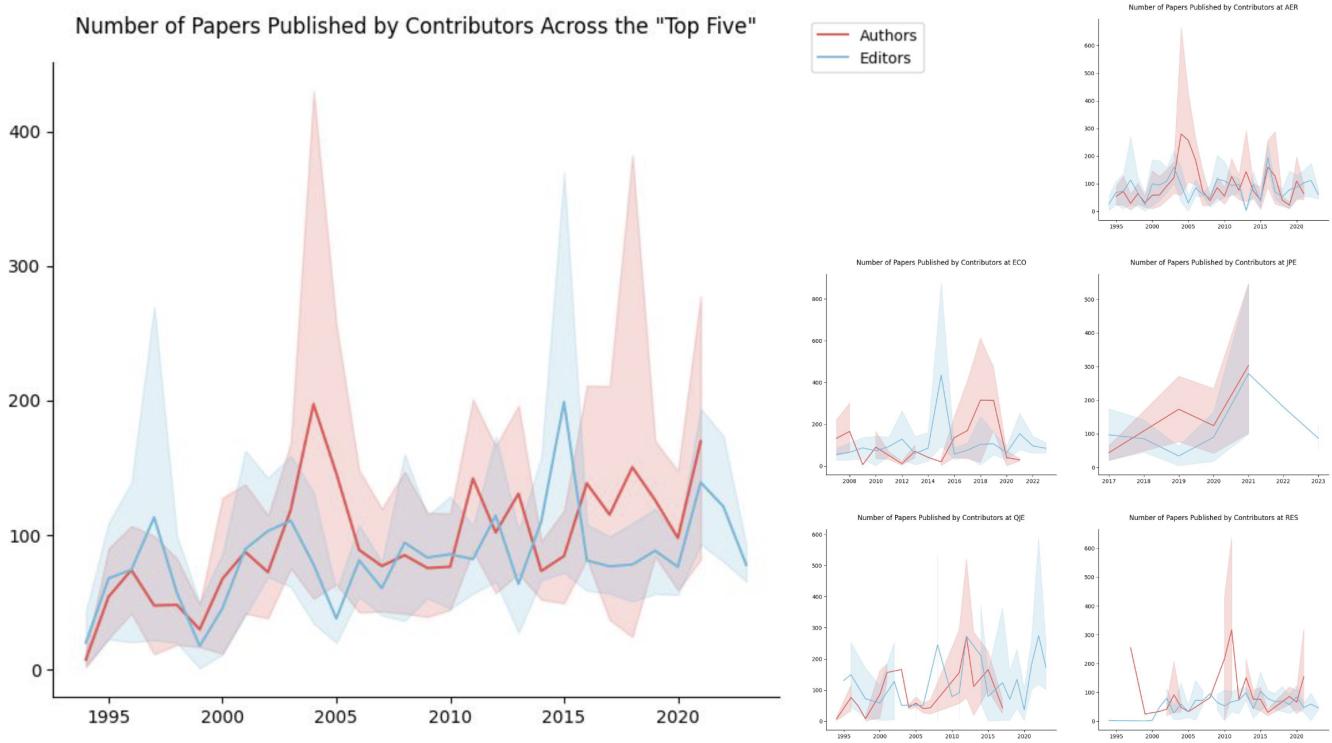


Figure 5: Number of Papers Published by Contributors Across the "Top Five" and Breakdown by Journal

Journal	Non-Top 200 Authors	Non-Top 200 Editors
AER	36.6%	22.5%
ECO	21.9%	27.6%
JPE	24.0%	21.0%
QJE	23.2%	22.4%
RES	31.1%	41.7%

Table 3: Average Percentage of Non-Top 200 Affiliated Contributors by Journal

4.3 Institutional Affiliation Ranking

Figures 3 and 4, along with Table 3, highlight the underrepresentation of academics affiliated with non-top ranked institutions among the "Top Five". Among the editors at the "Top Five", only 22.5% on average were from institutions ranking outside the Top 200. Of the authors published in these journals, 32.1% were from non-Top 200 institutions. Although there are some fluctuations in the data when broken down by journal, the overall trend in the data suggests an overrepresentation of Top 200 ranked institutions. As evidenced by Figures 3 and 4, elite institutions are the majority even within the Top 200: around half of both published authors and editors at the "Top Five" are affiliated with Top 50 institutions.

4.4 Paper Count

The number of papers published by authors and editors across the "Top Five" as a whole appears to be comparable. Broadly speaking, the number of papers published by contributors tended to vary widely, as indicated by the 95% confidence intervals shown in Figure 5. As such, this metric becomes sensitive to outliers, several of which can be observed through the peaks on the visualized confidence intervals for both authors and editors. Nevertheless, there appears to be a slight trend towards a greater number of papers published in recent years for both authors and editors.

4.5 Citation Count

Similarly, the number of citations received by contributors across the "Top Five" appears to be comparable. Citation counts, in particular, have been shown to follow a general pattern of power law distributions. [2] The heavy-tailed nature of these distributions entails a lack of well-defined averages, with greater probabilities of outliers (in this case, contributors with very high citation counts). This phenomenon is observable in the confidence intervals in Figure 6's main graph, which show peaks and much wider ranges of values around 2015 and 2020.

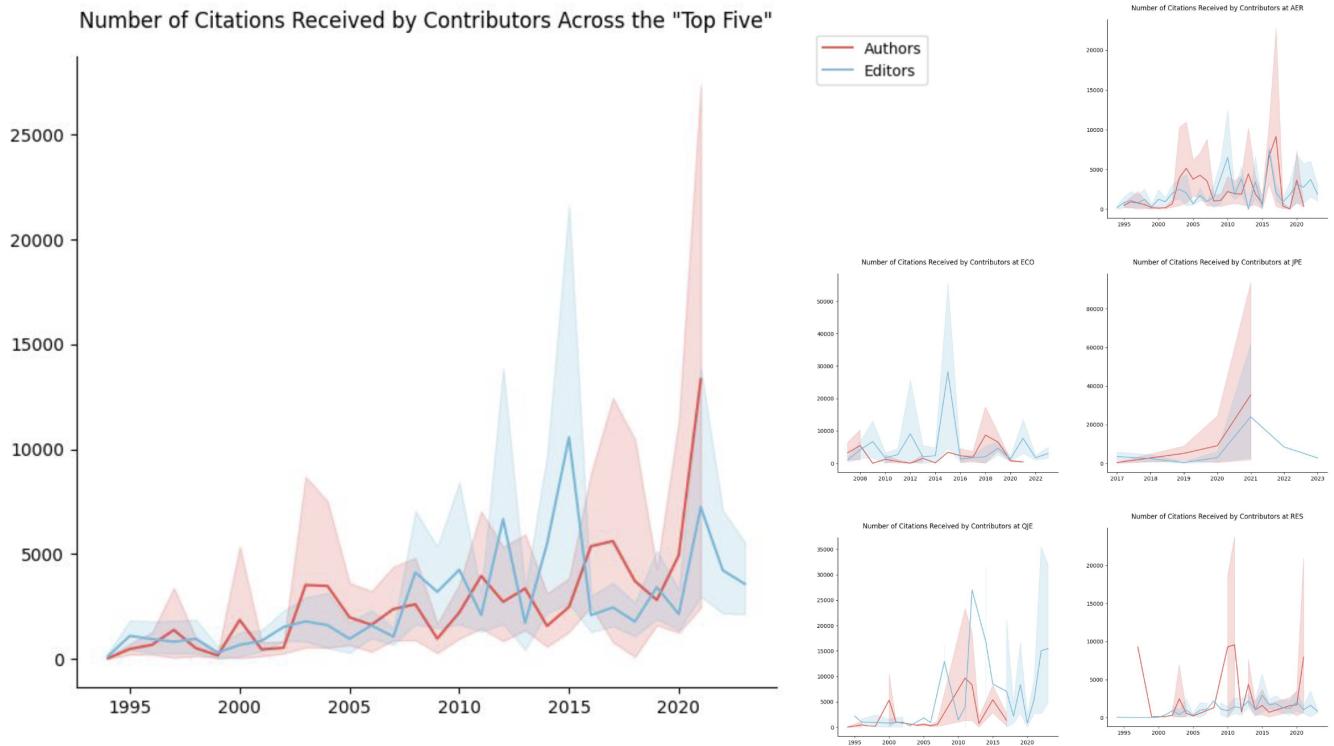


Figure 6: Number of Citations Received by Contributors Across the "Top Five" and Breakdown by Journal

5 DISCUSSION

The results of our analysis indicate that white, male, and top-ranked affiliated academics are overrepresented in the "Top Five". More specifically, our findings reveal that women are underrepresented in both editorial and author positions, with the percentage of women contributors never exceeding 30% across any of the 5-year intervals studied. Non-white academics are also underrepresented, with non-white authors making up only 37.0% of authors published. Similarly, individuals affiliated with non-Top 200 institutions are underrepresented among both editors and published authors. The number of papers published and citations received by authors and editors are comparable. However, the results show a wide variation among contributors, with outliers observed in both metrics.

5.1 Limitations

While the findings of this research shed light on the diversity and academic accomplishment across the "Top Five" economics journals, it is important to acknowledge the limitations of this analysis. One of the main limitations faced was the sparseness of author data available in the Microsoft

Academic Graph. While this database provided a comprehensive source of information on authors and editors for the journals studied, not all papers published in the "Top Five" were included in the database. This may have led to a potential underrepresentation of some authors, and therefore an incomplete picture of the diversity of the "Top Five".

Beyond this, not all Front Matters documents were available between 1994 and 2023. For Econometrica, these documents were only available beginning in 2007; for the Journal of Political Economy, these documents were only available beginning in 2017. This resulted in smaller sample sizes for these two journals and limited the project team's ability to make accurate comparisons between journals. Finally, the analysis for the number of papers published and the number of citations received was also limited by the existence of outliers - typically authors who are very prolific, but occasionally also editors. These outliers introduced more variance into the available data, making it difficult to draw conclusions about the overall trends in academic accomplishment.

5.2 Implications

The findings of this research project suggest that there are persistent underrepresentation issues for women, non-white academics, and those affiliated with non-Top 200 institutions

in the "Top Five" economics journals. The underrepresentation of women and non-white academics across the "Top Five" is a trend of significant concern. To ensure that diverse perspectives are represented and biases are minimized within the field of academic economics, it is imperative that these disparities are addressed. This might be achieved through initiatives that increase diversity in hiring and promotion decisions. However, it might also necessitate more general changes in the culture of academia, such as improving mentorship and networking opportunities for underrepresented social minorities.

The data also reveals an interesting pattern with respect to institutional affiliation rankings. The concentration of authors and editors in a small number of elite institutions suggests that these researchers may have more or greater opportunities for publication and editorial positions. This could, again, limit the diversity of perspectives represented in the "Top Five", which represent the peak of academic economics. To address this, new strategies and policy changes that promote and support researchers from a broader range of institutions may need to be implemented. Overall, these findings highlight the need for continued diversity, equity, and inclusion (DEI) efforts in the field of academic economics.

Finally, the comparable numbers of papers published and citations received by contributors across the "Top Five" indicate a lack of support for the hypothesis that editors are more accomplished academics than authors. However, it is worth noting that the presence of outliers in both the paper and citation counts increased the variance of the dataset, making it more difficult to draw conclusions about any particular trend from the sample available for this research project.

6 CONCLUSION

This research project aimed to investigate the diversity of editorial boards and authors published in each journal in the "Top Five". By analyzing gender, race, and institutional affiliation ranking, our study aimed to address the ongoing issue of underrepresentation of social minorities in academic economics. Our findings did not support the hypothesis that editors would be less diverse than authors, as per the leaky pipeline phenomenon. However, our analysis did reveal that white, male, and top-ranked affiliated academics are overrepresented among both the authors and editors of the "Top Five" economics journals. The corresponding underrepresentation of social minorities among both authors and editors at the "Top Five" underscores the need for continued action to increase their participation at the highest levels of the academic hierarchy.

Additionally, our findings indicate no significant difference between the number of papers published and number of

citations received by authors and editors. This suggests that editors are not always more prolific academics than authors. This is most likely due to the existence of outliers within the dataset used in this project, combined with the fact that paper and citation distributions have been found to follow power laws.

In conclusion, this research project provides several insights into the state of diversity at the uppermost echelon of academic economics as well as the comparative academic accomplishments of authors and editors. Our findings highlight a need for action to create a more diverse, equitable and inclusive environment and encourage the participation of social minorities within academia. The project team hopes that the results of this research project will contribute to ongoing efforts to promote equity and inclusion both within and beyond the field of academic economics.

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