

The Rise of Research Teams: Benefits and Costs in Economics

Online Appendix

This online appendix provides further information about the Microsoft Academic Graph, including the data extract used in the paper and the field definitions. The MAG data extract was taken in October 2018. See the replication files at OPEN ICPSR (<https://www.openicpsr.org/openicpsr/>) for access to the paper's data extract and the replication code.

The Microsoft Academic Graph (MAG) is a publically accessible database that indexes scientific publications (Sinha et al. 2015). It is larger in scale than the Web of Science, and includes publications from over 48,000 journals as well as conference proceedings. Paper-level information includes field, subfield, journal, author information (including name disambiguation), and both backward and forward citation linkages.

All papers in the MAG are assigned to one of 19 high-level field codes ("level 0 fields"), one of which is economics. The data used in this paper include all 1.7 million articles with the economics field code, covering the time period 1816-2018. The MAG further indexes 294 different subfields ("level 1 fields"). The median paper in the level-0 economics field has 2 level-1 subfields.

The subject matter classification is done at the article level in the MAG. This approach has the advantage of drawing papers widely according to topic, including from general interest economic journals, where many of the most important papers on a given subject may lie. On the other hand, the MAG approach, by drawing widely on topic, includes economics-oriented articles that appear beyond more purely economics-oriented journals. A different approach is to define fields at the journal level, rather than the paper level. This latter approach is used in the Web of Science and produces a narrower set of economics papers. See Wuchty et al. (2007) for analysis of the rise of teams and rising impact of teams using the Web of Science, in economics and in all other fields.

The field-level analysis in Figure 3 is built from the MAG subfields that appear most frequently for economics papers. The largest 50 of the 294 subfields cover 93% of the field assignments to economics papers. The fields in Figure 3 are those that are especially salient from among these large fields, with some fields condensed together. The specific subfields and their groupings presented in Figure 3 are provided in the replication code (see Figure3.do). For example, "macroeconomics," "Keynesian economics," and "monetary economics" are placed together as "macroeconomics," and the subfields "finance," "financial economics," and "financial system" are placed together as "finance."

The field-level analysis in Table 1 draws, as an alternative approach, on the top journals in each field. The top journals were determined using the SCImago Journal Rank (<https://www.scimagojr.com/>), which ranks journals based on information from the citations received (Guerrero-Bote and Moya-Anegon 2012). The journals used in each economics subfield in Table 1 are provided in the following table.

Appendix Table 1: Fields and Journals in Main Text Table 1

Field	Journal
Development	<i>Economic Development and Cultural Change</i>
	<i>Journal of Development Economics</i>
	<i>World Development</i>
Econometrics	<i>Journal of Applied Econometrics</i>
	<i>Journal of Economic Geography</i>
Economic Geography	<i>Journal of Urban Economics</i>
	<i>Economic Geography</i>
	<i>Journal of Finance</i>
Finance	<i>Review of Financial Studies</i>
	<i>Journal of Financial Economics</i>
	<i>The RAND Journal of Economics</i>
Industrial Organization	<i>Journal of Industrial Economics</i>
	<i>International Journal of Industrial Organization</i>
International	<i>Journal of International Economics</i>
	<i>Journal of Human Resources</i>
Labor	<i>Journal of Labor Economics</i>
	<i>Journal of Human Capital</i>
Law and Economics	<i>Journal of Law Economics & Organization</i>
	<i>The Journal of Law and Economics</i>
	<i>American Economic Journal: Macroeconomics</i>
Macroeconomics	<i>Journal of Monetary Economics</i>
	<i>Journal of Economic Growth</i>
	<i>Public Choice</i>
Public	<i>National Tax Journal</i>
	<i>Journal of Public Economics</i>
Theory	<i>Econometrica</i>
	<i>Journal of Economic Theory</i>

References

- Guerrero-Bote, Vicente P. and Félix Moya-Anegón. 2012. "A further step forward in measuring journals' scientific prestige: The SJR2 indicator." *Journal of Informetrics* 6: 674–688.
- Sinha, Arnab, Zhihong Shen, Yang Song, Hao Ma, Darrin Eide, Bo-June (Paul) Hsu, and Kuansan Wang. 2015. "An Overview of Microsoft Academic Service (MAS) and Applications." <http://dx.doi.org/10.1145/2740908.2742839>.
- Wuchty, Stefan, Benjamin F. Jones, and Brian Uzzi. 2007. "The Increasing Dominance of Teams in the Production of Knowledge." *Science* 316 (5827): 1036–39.