

## Response to Referee Report #2

*Note: Author responses in italics after referee comments.*

### Summary of article

The article conducts a text-based analysis using keywords from the JEL classification system to analyze trends in the research foci of economists for fifty years. She confirms previous results that show that macroeconomics has declined as a percentage of articles published and shows a rise in micro-foundations in the remaining macroeconomics articles. She breaks down her results by journal and looks at changes in page length by subject.

She examines co-authorship by subject, finding that there is “no dominance for co-authorship in particular fields”; however, she does note that Agricultural and Natural Resource Economics (a subject area that is a source of a number of articles in her literature review) has a co-authorship rate 50% higher than sole authorship.

While she conducts her analysis on titles, abstracts, and articles, she presents her analysis on the full text of the articles, a novel and important methodology for the literature.

### Review

I believe that the article has strong merit for publication but requires revisions. I suggest a “revise and resubmit”. First, the author can make a better case for how her results fit into the literature. Second, the author should use her methodology to show how it compares to other methodologies, specifically that used by Kelly and Breustle (2011). Third, the author should address the issue of changing nomenclature by expanding the keyword list to include previous iterations of the JEL subject code system.

First, many of the papers that the author includes in her literature review focus substantially on “what economists do” and her text-based approach can add direct value to these inquiries. Based upon my reading of the papers, Granger (1994), Medema (1996 on page 89), Pardey and Smith (2004), Card and DellaVigna (2013), Laband and Tollison (2000), and Kim, Morse, and Zingales (2006) all use some form of “research foci” in their analysis that might be improved by the textbased approach. Rather than having a general discussion of how economists examine their field, the author has the opportunity to show how her work can have a substantial impact on the types of analyses the economists have conducted and may conduct in the future. This places her paper as an important methodological advancement.

As part of the revision of the literature review, two other papers should be added. Durden and Ellis (1993) create a list of highly cited papers to identify the most influential papers in top economic journals 1965-1985. They find that these papers are concentrated in three fields: general economics, macro (domestic monetary and fiscal), and labor. Their approach would benefit from the author’s work. Also, Kelly and Bruestle (2011) calculate the percentage of articles published in each JEL subject code from 1969-2007 to detect trends in subject areas in

economics. They weight their results equally or with article impact factors. Contrary to the statement that “[p]revious research investigating trends in economics has also concentrated on this list”, Kelly and Breustle provide three journal sets in their research and include a set of all journals.

Second, the Kelly and Bruestle results provide a few opportunities for the author to show how her approach adds to the literature. One surprising result in their paper is the rise of JEL codes 80-89: information, knowledge, and uncertainty. In the 1970s, these sub-fields represented 1.2% of articles in their “eight general journals” (similar to the author’s journal set). In 2000-2007, these sub-fields represented 9.0% of articles. (Table 4)

However, the term “asymmetric” does not even appear in the pre-1991 JEL classification, though the term “information” appears in sub-field 026, creating the possibility that the articles existed before the 1990s but were misclassified. By employing text-based analysis using the keywords in D80-89, the author can confirm or contradict the result that information, knowledge, or uncertainty has grown from one out of a eighty-three to represent one out of eleven articles.

Third, the use of current JEL key codes may introduce a bias where newer terms that are in the current JEL classification system are considered and older terms that are no longer in the JEL classification are ignored. One approach to deal with this is to use a superset of terms from the original 1969 introduction of the JEL codes (when the Journal of Economic Abstracts became the JEL), the March 1991 revision of those codes to the letter system, and the current 2014 list that is being used. This can be done as a robustness check.

*The above, thoughtful comments by the reviewer seem to point to two main areas where improvements could be made to the paper: 1) Add the additional cites mentioned (specifically, Kelly and Breustle (2011) and Durden and Ellis (1991)) and integrate with and expand the literature review, and 2) Address the issue of previous JEL subject code iterations and how keywords may have changed.*

*These are both good points. I have now read Kelly and Bruestle (2011) and Durden and Ellis (1991) and will incorporate their results into the literature review. The work by Kelly and Bruestle (2011) in particular has some interesting results – including corroborating the decline in share of Macroeconomics research – the discussion of which will certainly add to the narrative of the paper.*

*The need to address previous JEL iterations is another good point. I have made contact with the AEA (creator of the JEL Keywords lists) and they are in the process of investigating for me old iterations of the Keywords lists. So far, the belief is that the lists are only added to over time (and Keywords are rarely, if ever, deleted), therefore bias from not recognized historical words should be small to nonexistent. However, it would be good to know for certain and as soon*

*as greater clarification from the AEA on old Keyword lists is received, discussion of this and how the Keyword lists may or may not have been affected over time will be included.*

### **A few general comments**

Figures 5 and 7 provide only a limited amount of information, the trend of macroeconomics from 1960 to 2010. The rest is noise. The use of tables with averages is more illuminating and could replace Figure 5. A suggested format would have each JEL Subject Letter, with subject name, get one row with the average percentage for each decade in each column. In this way, the reader could see both the overall trends as well as the keywords (tokens) used. Figure 7 is more difficult to replace and, perhaps, should just be a graph of the macro trend for each journal.

Has the share of financial economics articles risen even in general economics journals (especially when combined with Business Administration)? Is there a recent drop in the share of international economics articles? Are the smaller fields being “squeezed out” of general interest journals? The author may not find these questions relevant (though the last merits discussion) but a well-designed table will allow the reader to gain some insight into these issues.

For instance, footnote 18 on page 12 notes that “Financial economics shows a statistically significant decline in research attention across three of the four decades”. This contradicts Kelly and Bruestle who show that financial economics rises in attention for their eight general journals and for all journals. Without the numbers, it’s difficult to assess what the differences are. When the author provides the table suggested above, she can discuss the differences she finds by using text-based analysis.

*A table as the reviewer has suggested has been added.*

The author should compare her co-authorship results to Laband and Tollison (2000). Sen’s address in *Economica* was published in 2008, not 2007.

*Done, and done.*

### **References**

Durden, G., and L. V. Ellis. “Why Economists Rank Their Journals the Way They Do.” *Journal of Economics and Business*, 43, August 1991, 265–79.

Kelly, M. and S. Breustle. “Trend of Subjects Published in Economics Journals 1969-2007.” *Economic Inquiry*, 49, July 2011, 658-673.