References across the Fence: Measuring the Dialogue between Economists and Geographers

Steven Brakman, Harry Garretsen & Charles van Marrewijk

1. Introduction

“.I and my colleagues definitely read too little by people from outside our tribe, and should look over the fence more often.” (Krugman, 2010, p. 7)

In their analysis of the dialogue between (geographical) economists and (economic) geographers, Duranton and Rodríguez-Pose (2005) observe that the state of affairs can best be described as a non-debate. With some notable exceptions in both “tribes” (see below), the general picture is one of “two disciplines ignoring each other” (Duranton and Rodríguez-Pose 2005, p. 1695). This is remarkable because the (sub) disciplines of geographical economics and economic geography are, ultimately, interested in the similar issues the uneven distribution of economic activity across space. Our starting point is that both (geographical) economics and (economic) geography are very much “imperfect” and that they can learn from each other’s contributions either to improve their own theories or at least so as to know what to disagree with.

In this paper we provide empirical evidence that tries to measure the interchange between (geographical) economists and (economic) geographers. In doing so, and in line with the occasion for this special issue, we will use the first decade of the Journal of Economic Geography as our main data base. Additional data sources like Web of Science will also be used. Our main aim is to assess the extent to which geographers and economists engage in cross-referencing: do economists and geographers cite each other’s work and if so what is cited by whom?

Although the prevailing impression is that the debate between geographical economists (hereafter, economists for short) and economic geographers (hereafter, geographers for short) is rather quiet, there are a number of important contributions that take this debate more seriously. Within geography there has been a discussion in recent years as to
the relevance for geography of (mainstream) economics in general and of the new economic geography (NEG) literature in particular. Some have argued (notably Amin and Thrift, 2000) that geographers should “do away” with (mainstream) economics altogether, but this position has been strongly criticized from within geography itself (Rodríguez-Pose (2001), Martin and Sunley, (2001), Scott (2004)). The role of economics within geography is not a fixed one (Scott, 2000; Sheppard, 2000), but as Martin (1999), Scott (2006), Plummer and Sheppard (2006), Rodríguez-Pose (2011) and Storper (2011), for example, argue, the question is not so much whether economics is relevant but rather which kind of economics. As to the latter, right from the launch of the NEG by Krugman (1991), many geographers effectively decided that the NEG literature could be safely ignored. On the other hand, and despite being very critical of the NEG work, geographers such as Ron Martin, Allen Scott, Eric Sheppard, Michael Storper and Andres Rodríguez-Pose made it clear that economic geographers would be well-advised to take notice of (future developments of) the NEG literature.

On the other side of the fence, and after the (re)discovery of the importance of economic geography by (mainstream) economists from the 1990s onwards, most economists have not taken much notice of either the previous and ongoing research by geographers or the critique of geographers on NEG. Here too, there are, however, some exceptions, including Krugman (1992, 2010) himself. Apart from Duranton and Rodríguez-Pose (2005), Overman (2004) is a good example of an attempt to demarcate the common ground between economists and geographers. In a similar vein, we ourselves have previously argued that NEG research could benefit from taking geography more seriously (see Brakman and Garretsen (2003) and Brakman, Garretsen, and Van Marrewijk (2009, ch. 12)).

As to the (small) literature that takes both sides seriously, there are also examples of actual collaboration. Examples of economists and geographers teaming up to discuss the dialogue (or the lack thereof) between economists and geographers are Duranton and

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2 Preceding the rise of NEG, (international) economists had already recognized that geography could be important but in doing so paid scant attention to the work of geographers. Empirical research on the gravity model of trade that dates as far back as the 1960s is a good example; see Van Bergeijk and Brakman (2010) for a recent survey of the development of the gravity model.
Rodríguez-Pose (2005), Duranton and Storper (2006) and Garretsen and Martin (2010). Two very good and highly cited examples of collaborative efforts that actually engage in mutual research (on the relevance of location in our modern ICT age) are Leamer and Storper (2001) and Storper and Venables (2004). And there is of course the Journal of Economic Geography. When the journal was launched in 2001, a main reason for doing so was to serve as a platform for debate between economists and geographers (see Arnott and Wrigley, 2001; Wrigley and Overman, 2010). More than any other journal in the field of geographical economics or economic geography, this journal is aimed at promoting dialogue between economists and geographers.

All of the above is, however, based on mere impressions about the interchange between economists and geographers. In this paper we thus want to provide some empirical evidence that tries to measure that interchange. Our aim is not to engage in a full-blown bibliometric analysis of the Journal of Economic Geography or specific papers/authors (see Bodman, 2010 and Dunford et al, 2002). Instead, our main goal is more limited, namely to establish the degree of cross-referencing between economists and geographers. The remainder of the paper is organized as follows. In section 2 we describe our main data set and we provide some descriptive statistics of the reference culture in the Journal of Economic Geography. Using this data set, we analyze the journal’s cross references in section 3. In section 4 we identify the cross-references in terms of citations to 12 selected papers from leading scholars in economic geography and geographical economics. Section 5 concludes.

2. Data set

Our main data source is thus the Journal of Economic Geography. More specifically, we analyze 244 papers published in the Journal of Economic Geography in the period January 2001 – January 2010 (excluding editorials and corrigenda). Taken together these papers

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3 Also the Oxford Handbook of Economic Geography (Clark et al, 2000) brings together researchers from various fields in an attempt to stimulate discussion.

4 One could argue that the sub-field of regional science provides a meeting ground for economists and geographers and that here one finds “a large number of scholars who are ‘in between’ geographical economics and economic geography [such that] the great majority of regional science work (such as input-output analyses) belongs neither to mainstream economics, nor to geography proper” (Duranton and Rodriguez-Pose, 2005, p. 1697). A call for more dialogue across (sub-)disciplines that engage in research in regional science features prominently in the 50th anniversary issue of the Journal of Regional Science that was edited by Gilles Duranton (2010), In the same issue (the economist), Berliant (2010) also argues that an improved dialogue will be far from easy to realize.

5 For an interesting bibliometric attempt to measure the impact of one author, Paul Krugman, that clearly has a bearing on the topic of the present paper, see Behrens and Robert-Nicoud, 2009.
give us a list of over 14,000 references. Before we can look into the (cross-)references and discuss the implications for the interchange between economists and geographers, we first have to categorize these 244 papers and their authors.

Table 1 Categorization of papers in Journal of Economic Geography, 2001-2010

<table>
<thead>
<tr>
<th>Paper type</th>
<th>with 'other' authors</th>
<th>without 'other' authors</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geography</td>
<td>21</td>
<td>119</td>
<td>140</td>
</tr>
<tr>
<td>Economics</td>
<td>17</td>
<td>79</td>
<td>96</td>
</tr>
<tr>
<td>Combination</td>
<td>1</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>205</td>
<td>244</td>
</tr>
</tbody>
</table>

For each of the 244 papers, we classified the authors as geographers, economists, or ‘other’ (e.g. international business authors, sociologists etc.). The classification of authors is based on their affiliation, the content of the paper and, when doubts remained, additional information to be found on authors’ homepages. We also categorized each paper according to one of three possibilities. An article written exclusively by geographers or by geographers in combination with ‘other’ authors is classified as a ‘geography’ article. Similarly, a paper written exclusively by economists or by economists in combination with ‘other’ authors is classified as an ‘economics’ article. If an article is written by both geographers and economists like Storper and Venables (2004), it is classified as a ‘combination’ article. There are only 8 combination articles (in only one case this also involved ‘other’ authors). This leaves 18 papers written exclusively by ‘other’ authors still unclassified. In those cases we looked at the content of and methods used in the paper to classify it either as a ‘geography’ paper (in 12 cases) or as an ‘economics’ paper (in 6 cases). Table 1 shows that most papers (57 per cent of the total,
140 papers) are in the geography category, compared to 39 per cent economics papers and only 3 per cent combined papers.

Figure 1 Journal of Economic Geography; type of article and type of authors over time

The number of papers is increasing over time as the number of issues per annual volume increases. As to the evolution over time of the type of papers and hence, related to this, of the type of authors, Figure 1,a-b shows that the type of paper over the period 2001-2010 has fluctuated considerably over the years. After a balanced initial period (2001-2003), came a period in which economics papers dominated, (2004-2005), followed by a period in which predominantly geography papers were published (2006-2009). The small share of combination articles (and authors) shows no clear pattern over time.
After classifying each paper and its authors, we are in a position to look at the references for each of the 244 papers. The average number of references in a geography paper turns out to be 74.5 against an average number of references in an economics paper of 39.8. The respective medians are 71 and 35. This already suggests one important “cultural” difference between geographers and economists; geographers cite more (see Figure 2). It also indicates that when we start to compare the cross-referencing pattern of geographers and economists we have to correct for the fact that geographers are prone to cite more anyway.

Figure 2 Journal of Economic Geography; type of article and number of references

Note: the economics paper by Rey and Janikas (2005) with 202 references is an outlier in the distribution.

Given the goal of the present paper, we think that the Journal of Economic Geography is a good place to start to quantify the interchange between economists and geographers (the occasion of this Special Issue is another reason). But focusing on this journal only, as well as by limiting the analysis initially to journal cross-references, might be overly restrictive. We will therefore use additional data. To be specific, for a subsample of the 2001-2010 period, we will also investigate all cross-references in the Journal of Economic Geography, including books, working papers, etc. In addition, we will change the journal cross-reference perspective to an author cross reference perspective in section 4.
3. **Cross-References (journals)**

In order to analyze cross-references, our first step is to classify the journals in subgroups that define economics journals, geography journals and, what we call, (economic) field journals. The last group defines a small group of 8 “spatial economics” journals that from a methodological point of view have an economics bias. Within this group of field journals we highlight *Regional Studies*, and the *Journal of Economic Geography* separately, because these two journals specifically aim to stimulate discussion between both disciplines. If a geographer refers to one of these 8 field journals it is considered as a cross-reference. References to these (economic) field journals – with the notable exception of *Regional Studies* and the *Journal of Economic Geography* [because of their specific aim to cover both disciplines]- are, however, not considered to be cross-references for economists. References to *Regional Studies* and the *Journal of Economic Geography* are thus counted as cross-references for geographers as well as economists. Sensitivity analyses, inter alia as to the treatment of these field journals, will show whether our conclusions change with alternative classifications.

The two groups of economics journals and geography journals contain the usual suspects in each of the disciplines. Typical economics journals are *The American Economic Review* or *The Economic Journal* whereas typical geography journals are *Environment and Planning A*, *Economic Geography* or *Progress in Human Geography*. The potential list of journals within each of the two disciplines is potentially very long and – admittedly – some subjective choices have to be made. When in doubt we classified references in the residual category ‘other’. Besides journals that are difficult to classify, this residual group also consists of other disciplines. We classified, for example, references to business journals, like *Journal of International Business Studies*, as ‘other’. Some sensitivity analyses indicated that our findings are robust to our classification choices.

Figure 3 illustrates the differences between the two disciplines with respect to cross-references. Under the heading ‘Economics’, the cross references of economists to geography journals are listed. Under the heading ‘Geography’ the cross-references of

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7 Our complete data-set – including the tables that are the basis of our analysis - can be downloaded from: [http://www2.econ.uu.nl/users/marrewijk/newgeo/](http://www2.econ.uu.nl/users/marrewijk/newgeo/)
geographers to economic journals are shown. From section 2 (Figure 2) we already know that both disciplines have different citation and reference cultures; geographers read more papers, or at least refer to more papers, than economists. In order to correct for these cultural differences between the disciplines we standardize the cross-references to a so-called combination paper: i.e. the number of cross-references is divided by the median number of references of the respective group (71 for geographers, 35 for economists, and 51 for combination papers), multiplied by the median of the combination paper group (51). This implies that cross-references to geography journals in an economics paper receive a higher weight than cross-references to economic journals in a geography paper.

Figure 3 Type of article and cross-references*

*Standardized to the median of a combination paper (see also table 1). The total number of standardized cross-references for geographers is 140 (average 7), and for economists 96 (average 4.5).

Notwithstanding the standardization, it is clear from Figure 3 that the aforementioned disciplinary differences in reference patterns between economists and geographers remain. Economists cross-reference considerably less than geographers do. In 25% of the cases they do not refer at all to geography journals, whereas this number is only 3% for geographers. For both disciplines the median seems rather small, for geographers 5 and for economists 3.

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See table 1, and the text referring to table 1 for a definition of combination papers.
Comparing the cross-reference results to those presented in Duranton and Rodríguez-Pose (2005, p. 1696) enables us to put the numbers into some perspective. Using the 2003 issues of two leading field journals, *Economic Geography* and *Regional Science and Urban Economics*, they find that just 1.9% and 2.8% of all references were to economic and geography journals, respectively. If we “un-standardize” our numbers in order to make them comparable to those of Duranton and Rodríguez Pose (2005), on average 7% of the references come from economists referring to geography journals, and 13% of the references come from geographers referring to economic journals. These numbers are substantially higher than the figures by Duranton and Rodríguez-Pose. So, a good characterization of our cross-reference data suggests ‘mitigated mutual ignorance’.

To measure the total number of references (Figure 2) and standardized cross-references (Figure 3) more precisely, we constructed so-called Probability-Probability (PP)-plots for cross-references as well as the total number of references, see Figure 4. In these PP-plots, the two distributions for cross-references and total references are compared in order to investigate whether they are the same for economics and geography papers. In order to construct Figure 4 the observations – that is, total references and cross references in each paper - are first sorted in ascending order of the number of total as well as cross references. Figure 4 then plots the cumulative share of references by economics papers on the horizontal axis, and the cumulative share of references by geography on the vertical axis (both for the total references (circles) and cross references (squares)). So, the first papers measured from the origin have the smallest cumulative share of total or cross references. An observation on this PP plot gives, starting from a point on the horizontal axis, the cumulative percentage of papers for the associated number of references by economics papers, compared to the cumulative percentage of

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9 If we correct for cross references by discounting references to *Regional Studies* and *Journal of Economic Geography*, because references to these journals might also reflect references to individual within one’s own field, the number of cross-references is respectively 4% and 9%: still substantially higher than the numbers presented by Duranton and Rodríguez-Pose (2005).

10 As pointed out to us by Gilles Duranton and Andres Rodríguez-Pose, the fact that the cross-references scores are higher for the *Journal of Economic Geography* might also be due to a selection bias: compared to other economics or geography journals, this journal could simply attract those economists and geographers that are more inclined to “look across the fence” anyway. To the extent that this is the case, it is not the journal as such that promotes mutual debate, as indicated here by cross-references, but the fact that authors self-select. To check for this, we took 9 geographers and 9 economists from our data set that cross-referenced the most. For these 18 authors we then took their own most cited papers (source: *Web of Science*) in “pure” economics or geography journal (field journals were excluded) we checked the corresponding list of references for each paper for cross-references. It turns out that, on average, the share of cross-references by these authors is than clearly lower than the shares shown in Figure 3 which suggests that our results in Figure 3 are not merely driven by self-selection. In their papers outside the *Journal of Economic Geography*, these authors seem to cross-reference less than they do in their paper(s) in the *Journal of Economic Geography*. 

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geography papers for that particular number of references (line indicated by circles). If all observations are on the diagonal the two distributions are the same. A similar procedure is followed for cross references of economists to geography journals, and references of geographers to economic journals (line indicated by squares). Here too of course, if all observations are on the diagonal the two distributions are the same.

Visual inspection of Figure 4 indicates that the cumulative percentage of geography papers that have a specific number of references is significantly smaller than the cumulative percentage of economics papers for that particular number of references. This is true for both the distributions of total and standardized cross-references: geography papers not only have a significantly longer list of total references, but, even more importantly for our present purposes, they also cross-reference more!

*Figure 4 PP-plots of total references and (standardized) cross-references, geography and economics papers*

The advantage of a PP plot is that it not only visually reveals differences between distributions, but that we can test for differences. Test statistics are based on the difference between the PP plot and the diagonal. Furthermore, one could argue that our methodology inflates the number of cross-references. *Regional Studies (RS) and Journal of Economic Geography (JEG)* aim specifically at each of the disciplines and a reference to one of these journals might not represent a cross reference, but in fact a reference to one’s
own field (see also footnote, 9). Table 2 gives the KS-statistic, not only for the distributions depicted in Figure 4, but also for cross-references corrected for references to RS and JEG. In all cases the distributions are significantly different for the 1% critical values.

Table 2  Kolmogorov Smirnov (KS) two-sided test

<table>
<thead>
<tr>
<th>Tested distributions</th>
<th>KS statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of references (for geographers relative to economists)</td>
<td>4.77</td>
</tr>
<tr>
<td>Cross-references*</td>
<td>1.83</td>
</tr>
<tr>
<td>Cross-references (excluding references to RS and JEG)*</td>
<td>1.92</td>
</tr>
</tbody>
</table>

Null hypothesis: two samples are from the same, unknown, underlying distribution; one per cent critical value = 1.63; * references standardized to combination article using median values.

As we have used the Journal of Economic Geography as our data set until now, it is also interesting to look at the development of the number of references to the journal itself. Figure 5 shows that over time and after a somewhat volatile beginning, the cumulative share of the eight field journals, as defined by us, increases from 5% to almost 8% in ten years time. Remarkably, this increase is largely caused by an increased number of self-references to the Journal of Economic Geography which is a sign that the journal has established itself in a relatively short time.

Figure 5 References to the Journal of Economic Geography; cumulative 2001-10
As a sensitivity check, we also looked at all references for the papers published in the *Journal of Economic Geography* in the period January 2008- January 2010. That is to say, besides references to journals, we also included references to books, working papers, reports etc. The general picture from this sensitivity exercise is that both groups still cite mostly within their own field, but the share of outside references is similar.

4. **Cross-References (top-authors)**

In this section, we change our perspective from investigating (cross-) references to economics or geography journals to references to the work of a limited set of authors: 6 leading geographical economists and 6 leading economic geographers. The choice which authors to include on this list of top 12 authors is inevitably somewhat arbitrary, but we tried to limit this by letting our choice be guided by the data derived from the references in *Journal of Economic Geography*. We picked the 6 authors of each group that topped the 2008-2010 list of total references introduced at the end of the previous section. This resulted in the following 6 geographers and 6 economists that together make up our list of 12 “top-authors”: Gordon Clark, Peter Dicken, Meric Gertler, Ron Martin, Allen Scott, Michael Storper (6 geographers); Masahisa Fujita, Edward Glaeser, Vernon Henderson, Paul Krugman, Jacques Thisse, and Tony Venables (6 economists).

Most of these 12 authors have published in the *Journal of Economic Geography* in the period under consideration and 10 of these 12 authors are involved in the editorial board of the journal.\(^{11}\) Figure 6 shows, first of all, for each of the two sub-groups their cumulative share in the total number of references in the *Journal of Economic Geography* in the period 2001-2010. Apart from an initial spike in the reference share of the top 6 economists in the years 2001-2002, (in no small part due to Krugman (1991)), the share for both groups hovers around 5%. In January 2010, when the cumulative number of references exceeds 14,000, this implies that 4.8% and 4.5% of all these references are to work by these 6 geographers and 6 economists respectively.

\(^{11}\) To check whether these 12 authors are indeed “top authors” from the perspective of the *Journal of Economic Geography*, we also looked into the Google Scholar citations to papers published in the journal for the period 2001-2010 using the “publish or perish” software provided by Harzing (2010), see [www.harzing.com](http://www.harzing.com), and this basically confirmed our choice. More generally, time and space limitations prevent us from doing a more extensive search in terms of number of authors. We leave this to future research.
Our real interest with these 12 top-authors is with the pattern of cross-references with respect to these authors. Here, we turn to the information provided by the *Web of Science*. For each of the 12 authors we selected one of their journal publications and then checked for each of these 12 papers the citation patterns. In selecting a paper for each of these 12 authors we did not go for the most cited papers according to the *Web of Science* but instead took a sub-sample from the *Journal of Economic Geography* issues, January 2008 - January 2010, and took the paper from each author that was most frequently cited in this period. Since *Web of Science* only tracks citations made in other journals, this leaves out citations made to books, conference volumes etc. In line with the journal classification used in section 3, we not only kept score for citations stemming from economics and geography journals but also for the 8 field journals as well as for *Regional Studies* and the *Journal of Economic Geography*. Note that the Eco and Geo categories in Table 3 do not include any of the 8 field journals. The citation scores for *Regional Studies* (RS) and the *Journal of Economic Geography* (JEG) are listed separately but are also included in the citation scores for the Field journal column in Table 3. To take an example, the Fujita and Ogawa (1982) paper has been cited 161 times in journals; of these 161 citations, 24% come from “pure” geography journals, 55% from the 8 field journals (of this 55% 1% stems from *Regional Studies* and 3% stems from *Journal of Economic Geography*). The remaining 17% are citations in “pure” (excluding the field journals) economics journals.
Table 3 shows the results. By comparing the two columns in **bold** in Table 3, it becomes clear that the asymmetry with respect to cross-references that we encountered in section 3 also applies here. At least for these selected papers it is true that as a share of total citations, the economics papers are cited more in geography journals than vice versa.

Note that this conclusion holds by only looking at “pure” ECO and GEO journals, the 8 field journals (including RS and JEG) do not enter this comparison.

<table>
<thead>
<tr>
<th>Publication</th>
<th># citations</th>
<th>Eco %</th>
<th>Geo %</th>
<th>Field %</th>
<th>RS %</th>
<th>JEG %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fujita and Ogawa, 1982.</td>
<td>161</td>
<td>17</td>
<td><strong>24</strong></td>
<td>55</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Glaeser et al., 1992.</td>
<td>554</td>
<td>45</td>
<td><strong>14</strong></td>
<td>33</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Henderson, 1986.</td>
<td>142</td>
<td>37</td>
<td><strong>14</strong></td>
<td>43</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Krugman, 1991.</td>
<td>998</td>
<td>44</td>
<td><strong>14</strong></td>
<td>32</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Ottaviano, Tabuchi, and Thissle, 2002.</td>
<td>102</td>
<td>33</td>
<td><strong>2</strong></td>
<td>49</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Storper and Venables, 2004.</td>
<td>155</td>
<td>2</td>
<td><strong>53</strong></td>
<td>25</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Clark, 1998.</td>
<td>85</td>
<td>4</td>
<td>74</td>
<td>11</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Dicken, 2004.</td>
<td>59</td>
<td>2</td>
<td>70</td>
<td>14</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Gertler, 2003.</td>
<td>161</td>
<td>11</td>
<td>44</td>
<td>23</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Martin and Sunley, 2003.</td>
<td>250</td>
<td>9</td>
<td>55</td>
<td>18</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Scott, 2004.</td>
<td>34</td>
<td>0</td>
<td>41</td>
<td>32</td>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>Storper and Christopherson, 1987.</td>
<td>133</td>
<td><strong>10</strong></td>
<td>63</td>
<td>14</td>
<td>9</td>
<td>4</td>
</tr>
</tbody>
</table>

# number of citations in Web of Science (February, 2010) ** See also the Venables paper in the top panel of this table.

Another striking difference in Table 3 is that for the economics papers, the field journals are responsible for a relatively large chunk of the citations.12 The share of citations in

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12 Just like with the cross-references in section 3 (see Figure 3 and footnote 10), it could be argued that a selection effect might be relevant here. Are the papers by these top-12 authors highly cited and cross-referenced because they are so in general or because the papers are published in journals like the *Journal of Economic Geography* that makes these papers more “visible” for fellow researchers in economics or geography? To check for this, we took for each of these 12 authors their most highly cited paper in a “pure” economics or geography journal and looked the distribution of citations for each paper using the classification of Table 3. It turns out that the number of cross-references is much lower.
Regional Studies and the *Journal of Economic Geography* does not seem to differ systematically between the two groups of top-papers.\(^\text{13}\)

5. **Conclusions**

In this paper we have attempted to measure the ‘dialogue’ between economists and geographers. Our main data set covers the more than 14,000 (cross-) references from the 244 papers that were published in the *Journal of Economic Geography* from January 2001 to January 2010. Besides the fact that geographers generally cite more than economists anyway, they also significantly cross-reference more to the neighboring field of economics than vice versa. Although the description of the debate between geographers and economists as one of ‘mutual neglect’ might still hold in general, it does so to a lesser extent when looking at the papers in the *Journal of Economic Geography* and the (top-) researchers in the two fields. Even when allowing for some self-selection, our analysis indicates that geographers and economists that publish in the *Journal of Economic Geography* cross-reference more when compared to the degree of cross-referencing in other geography or economics journals. In this sense the *Journal of Economic Geography* has not only been successful in attracting some of the best work in both fields (see Wrigley and Overman, 2010), but it has also lowered the fence between economists and geographers.

Our analysis also raises a number of important issues that cannot be answered by simply counting and classifying references. We can for instance merely speculate as to what determines the (asymmetric) citation patterns of geographers and economists.

Differences in analytical style are probably relevant here. Economists typically prefer a more formal, mathematical style whereas geographers often go for a relatively more eclectic analytical approach that takes its cue from various (sub-) disciplines. The latter approach does not only lead to longer papers, but it also stimulates researchers to read and cite more widely. A more normative question is whether economics or geography are therefore too narrowly or too widely based respectively. Without taking sides here (but the authors of the present paper are, after all, economists themselves), we agree with the views expressed by the geographers Storper (2011) and Rodríguez-Pose (2011) in this

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\(^\text{13}\) Given that Krugman (1991), the 1st NEG model, has been an important impetus for the launch of the *Journal of Economic Geography* in 2001, we also broke down the 47 citations to Krugman (1991) (that is the 5% score in the JEG column in table 3) by year and made a distinction between economics (e) and geography (g) papers: 2001 (5 of which 4xe and 1xg), 2002 (6, 3xe, 3xg), 2003 (2, 1xe, 1xg), 2004 (7, 6xe, 1xg), 2005 (8, 8xe, 0xg), 2006 (6, 5xe, 1xg), 2007 (6, 3xe, 3xg), 2008 (3, 2xe, 1xg), 2009 (4, 2xe, 2xg). Not surprisingly, Krugman (1991) is cited more in economics papers and the number of citations seem to peak around 2005-2006 which is in line with the findings by Behrens and Robert-Nicoud (2009).
issue of the *Journal of Economic Geography* when they argue that these approaches are complementary and that both economists and geographers stand to learn from each other. A final issue that clearly warrants further research is that our analysis of the cross-references does not reveal much about the content or intensity of the dialogue. Are the cross-references just token references or do they signal a real interchange of views and ideas? The rather limited number of joint papers between economists and geographers could be seen to suggest that the dialogue is (still) more apparent than real. In this respect, our empirical evidence deals at best with a necessary but far from sufficient condition for a constructive dialogue between economists and geographers. There is certainly room for more dialogue in the next decade of the *Journal of Economic Geography*.

**References**


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