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## Orthodox Core–Heterodox Periphery? Contrasting Citation Networks of Economics Departments in Vienna

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# Orthodox Core–Heterodox Periphery? Contrasting Citation Networks of Economics Departments in Vienna

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## ABSTRACT

The notion of an ‘orthodox core–heterodox periphery’ structure and the extent of interdisciplinary links have been widely discussed, and partially investigated bibliometrically, within economic discourse. We extend this research by applying tools from social network analysis to citation data of three economics departments located in Vienna, two mainstream and one non-mainstream, to assess their relative citation patterns. We show that both mainstream economics departments follow the asserted core–periphery pattern and have a mono-disciplinary research focus, while the citation network of the non-mainstream department has a polycentric structure and is both more heterodox and interdisciplinary. These findings suggest that discussions about the future of heterodox economics should pay more attention to the organizational level and seek allies from other disciplines.

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## 1. Introduction

Throughout its history, economics has experienced episodes of pluralism and episodes of a dominant orthodoxy. What is considered heterodox and orthodox has varied both with time and location (Davis 2008). The last major paradigmatic shift occurred around the 1970s. Marked by the collapse of the Bretton Woods system, the end of the Fordist post-war order brought a profound societal transformation that was accompanied by pronounced changes in economics. States were increasingly seen as inefficient and labor unions were blamed for stagflation, which was conceived, at the time, as a crisis of the still influential post-Keynesian policy framework (Stockhammer and Ramskogler 2012). Since then, a dominant orthodoxy in economics has developed that is characterized by a formal, econometric approach and a broadly neoclassical framework. Once a paradigm becomes dominant, network effects lead to positive-feedback processes that create path dependencies and stabilize the discipline’s orthodoxy (Serman and Wittenberg 1999). Not departing too far from the dominant paradigm may become essential to obtain an academic position, be granted research funds and achieve publication.

Evaluative citation metrics further amplify the existing modes of hierarchy-formation in science (Dobusch and Kapeller 2009). As a result, heterodox economics has been

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losing ground within the economics discourse as well as within universities (Lee 2004; Colander 2009). In part, heterodox economists have themselves fueled this process through a ‘paradigmatic self-marginalization’ (Dobusch and Kapeller 2012a, p. 470). While heterodox schools of thought interact little with each other, they strongly reference the mainstream. In the institutional setting of economics as a discipline, where citation-based metrics and rankings play an increasingly important role, this contributes to the dominant position of the mainstream (Kapeller 2010).

Some heterodox ideas, however, have penetrated the field’s orthodoxy over the last few years. New research programs including approaches such as complexity economics, behavioral economics, evolutionary economics or neuro-economics have emerged. Contrary to the ‘traditional heterodoxy’, as described above and incorporating, for instance, post-Keynesian, Marxist or institutionalist thought, this new ‘mainstream heterodoxy’ (Davis 2008), ‘inside-the-mainstream’ heterodoxy (Colander, Holt, and Rosser 2004, 2010) or ‘mainstream dissent’ (Dobusch and Kapeller 2012b) is oriented towards the core of the discipline and largely remains within its formal econometric conventions. It tends to pursue a reform of the core orthodox principles, which still serve as a benchmark, rather than fundamentally challenging or rejecting them.

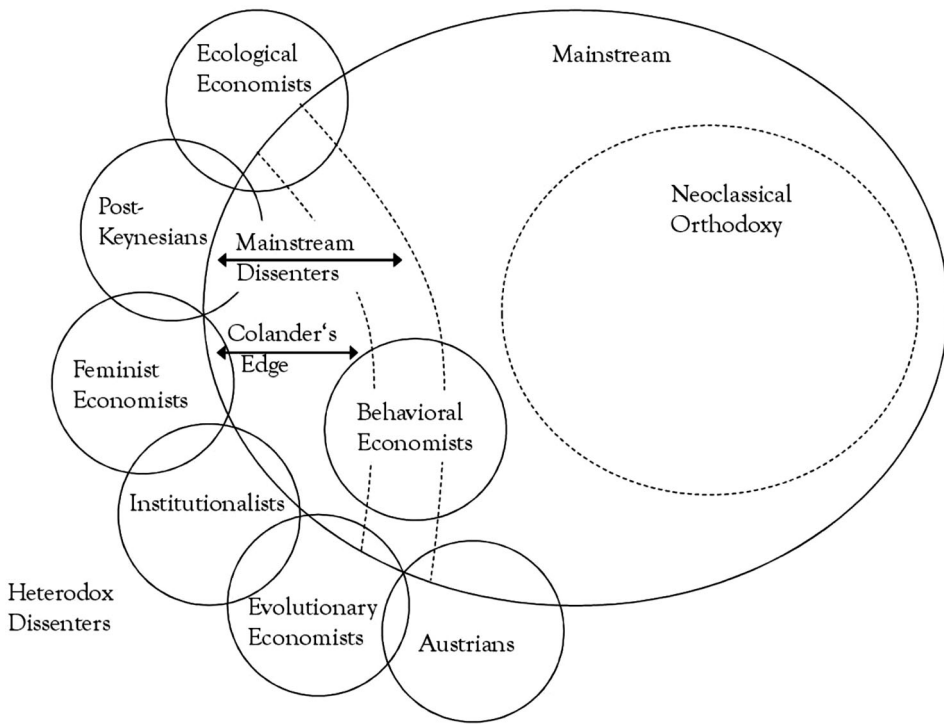
Many authors have described this relation between heterodoxy and orthodoxy as a core–periphery pattern with insiders and outsiders (e.g., Colander, Holt, and Rosser 2004, 2007, 2010; Davis 2007, 2008; Cronin 2010; Cedrini and Fontana 2015).

The field’s core principles and concepts are defined as orthodox and also suppress reference to periphery principles, while the field’s heterodox periphery is defined in terms of principles and concepts explicitly seen to lie outside the core and yet which also bear some relationship to the boundaries of the field as a whole. (Davis 2008, p. 355)

This core–periphery pattern of the paradigmatic discourse structure of economics is schematically illustrated by Dobusch and Kapeller (2012b). They suggest that economics is made up of a mainstream core with a neoclassical orthodoxy at its center, a heterodox periphery and mainstream dissenters operating near the core’s edge (Figure 1).

While the paradigmatic structure of the discourse in economics has received much attention, much of the literature has relied solely on a verbal and (to a lesser extent) statistical description. So far, only a few attempts have been made to empirically investigate whether economics follows an ‘orthodox core–heterodox periphery’ pattern.

Furthermore, Davis (2007) argues that, next to this ‘internal’ structure of the discourse, the ‘external’ structure—i.e., the openness to other disciplines—is also directly linked to this core–periphery pattern. According to Davis, all imports into economics from other sciences are initially heterodox and may contribute to a broader change of the discipline. However, Pieters and Baumgartner (2002), as well as Fourcarde, Ollion, and Algan (2015), in their much-discussed article on the superiority of economics, suggest that the discourse in economics relates less to other social sciences than its sister disciplines. They argue that economists generally tend to hold other disciplines and interdisciplinary knowledge in low esteem. The majority of economics professors reject the statement, ‘in general, interdisciplinary knowledge is better than knowledge obtained by a single discipline’ (Fourcarde, Ollion, and Algan 2015, p. 95), whereas the opposite is true for professors from other social science disciplines (Gross 2013). Similarly, according to Varga (2011), the citation patterns of economics are significantly more concentrated than those of sociology, in line



**Figure 1.** Paradigms in the economic discourse (Dobusch and Kapeller 2012b).

with the more mono-paradigmatic and less interdisciplinary structure of economics. In contrast, Dolfsma and Leydesdorff (2008) find strong links to other disciplines for a set of heterodox journals.

All this prior research has focused on the economics discipline as a whole. Little is known about the discourse structure at the organizational level of university departments. In this article, we provide a case study to assess the economic discourse structure at the department level by applying bibliometric methods and social network analysis to journal citations for three economics departments, two mainstream and one non-mainstream, located in Vienna. We investigate two hypotheses about the patterns of communication at these departments that follow from the literature. First, we expect the mainstream-oriented economics departments to display citation patterns that follow an ‘orthodox core–heterodox periphery’ structure as asserted for the discipline as a whole, while the non-mainstream oriented Department of Socioeconomics (SocEcon-WU) is likely not to exhibit such a core–periphery structure or a pronounced dominance of orthodox journals in the network.

We distinguish between heterodox and orthodox journals following Lee et al. (2010) and are thereby able to compare the citation networks to Dobusch and Kapeller’s (2009) paradigmatic map. Second, the literature suggests that mainstream economics tends to have a mono-disciplinary focus, whereas heterodox economics tends to display strong links to other disciplines. Therefore, we expect the economics departments’ citation networks to have few interdisciplinary links, whereas we expect the SocEcon-WU’s

citation network to include a broad variety of disciplines. We use community analysis to identify thematic clusters in the network to complement this analysis.

In Section Two, we introduce the case study approach, the bibliometric methods, the tools of social network analysis and give an overview of the data. In Section Three, the findings from the bibliometric, citation network and community analyses are presented. Section Four discusses the findings and Section Five draws conclusions about the role of heterodoxy in economics, the core–periphery hypothesis and interdisciplinarity at the organizational level.

## 2. Research approach

### 2.1. Case study

The case study focuses on the citation patterns of three Viennese university departments engaged in economic research. Following the classification by Thomas (2011), the object is to test the hypothesis of an ‘orthodox core–heterodox periphery’ structure in economic discourse and the extent of interdisciplinary links. The case study is theory-testing (Eckstein 1975; George and Bennett 2005) because it assesses whether the postulated discourse structure can be observed at the department level.<sup>1</sup>

Vienna provides an especially interesting setting within which to investigate these aspects. There are two mainstream-oriented departments of economics (Econ), one at the University of Vienna (UV) and one at the Vienna University of Economics and Business (WU). In recent years both of these departments have been criticized for the dominance of mainstream economics in their teaching and research agendas, which has led students to found the Society for Pluralist Economics Vienna (Gesellschaft Plurale Oekonomik Wien 2015). Dissatisfied with the narrow foci of these departments, the students participated in the ISIPE Open Letter for Pluralism in Economics and hosted a conference on pluralist economics at the WU in April 2015, with more than 300 participants.<sup>2</sup> Alongside these departments is the Department of Socioeconomics (SocEcon) at the WU, founded with a strong motivation to foster interdisciplinary and holistic economic research addressing ‘real-world’ problems (Lenoble 2010). The non-mainstream camp at the WU was further strengthened by the introduction of two new Master’s programs: Socioeconomics (in 2010) and Socio-Ecological Economics and Policy (in 2012).<sup>3</sup> These three departments in Vienna allows a comparative assessment of the citation patterns of mainstream and non-mainstream departments that are subject to a similar or even the same institutional framework and thus a testing of the core–periphery hypothesis and the extent of interdisciplinary links.<sup>4</sup>

<sup>1</sup>The case study is a snapshot at one point in time (February 2015). The focus lies on an institutional rather than a temporal juxtaposition of events. We chose this case for its great potential to exemplify the object as suggested by Thomas (2011, p. 514), who, in contrast to Yin (2014), argues that typicality and representativeness constitute inadequate grounds for the selection of a case.

<sup>2</sup>International Student Initiative for Pluralism in Economics.

<sup>3</sup>The Master of Socioeconomics succeeded the old diploma program in Socioeconomics, as part of the Bologna reforms of the Austrian higher education system.

<sup>4</sup>Moreover, the current state of economics in Vienna is of interest because historically it has been a prominent site for diverse economic schools of thought. It was home to economists such as Böhm-Bawerk, Wieser, Schumpeter, Menger, Mises, Polanyi, Lazarsfeld, Jahoda, Hayek, Rothschild, Morgenstern and Steindl (Rothschild 1999; Screpanti and Zamagni 2005; Guger and Walterskirchen 2012).

**Table 1.** Publications by department and journal category.

		SocEcon-WU		Econ-WU		Econ-UV	
		Number	% of total	number	% of total	Number	% of total
Publications	O	16	9.9	106	57.9	144	65.8
	H	27	16.8	14	7.7	24	11.0
	N	118	73.3	63	34.4	51	23.3
	T	161	100	183	100	219	100

O – Orthodox, H – Heterodox, N – Non-categorized, T – Total.

At the time of data collection, the two departments at the WU were of similar size. In total, 83 post-doctoral researchers and professors worked in each department. The economics department at the University of Vienna was smaller and included 31 researchers. The journals in which the researchers published vary significantly between departments. We used Lee et al.'s (2010) classification of 254 major economics journals to assign journals to a heterodox, an orthodox or a non-categorized group, respectively. The Econ-WU published 58 percent of its articles in orthodox journals and 8 percent in heterodox journals. At the Econ-UV, 66 percent of articles were published in orthodox journals and 11 percent in heterodox journals. In contrast, the SocEcon-WU published only 10 percent of its articles in orthodox journals and 17 percent in heterodox outlets. The share of articles published in non-categorized journals, which include journals from other disciplines, amounted to 73 percent at the SocEcon-WU, 34 percent at the Econ-WU and 23 percent at the Econ-UV (Table 1).

The publication patterns suggest that both economics departments are mainstream-oriented, which reinforces the criticism leveled by students. The SocEcon-WU's publication patterns, with a larger share of articles published in heterodox and non-categorized journals, is congruent with the department's goal of pursuing critical and interdisciplinary approaches. This different orientation of the departments constitutes an adequate basis on which to investigate similarities and differences in the discourse structure between the two mainstream departments and the SocEcon-WU, as well as the links to other disciplines of heterodox and orthodox economics.

## 2.2. Research method

To test the hypotheses regarding the existence of a core-periphery pattern and the extent of interdisciplinary links at the department level, we combine cognitive bibliometrics and social network analysis. Bibliometrics is used to calculate impact factors for journals and publications and thereby has an evaluative function. It is, nonetheless, also a tool for describing patterns of communication within science. This type of cognitive bibliometrics, as coined by Rip and Courtial (1984), reveals which authors, journals or groups engage in a dialogue with each other. Dense citation structures can be a result of similar content areas, similar methodologies (Pieters and Baumgartner 2002) or the social function of citations to demonstrate affiliation with colleagues or research traditions (Leydesdorff 1998). Citation analysis has been used to identify individual influential authors and papers (Pasadeos, Phelps, and Kim 1998) and theories (van der Merwe et al. 2007) and to investigate the relationships between journals (Cason and Lubotsky 1936; Eagly 1975; Doreian 1988). The investigation of citation flows, specifically cluster analysis, also allows the

identification of related research as well as theoretical and disciplinary boundaries (Narin, Carpenter, and Berlt 1972; Arms and Arms 1978; Gatrell and Smith 1984).

Within the discipline of economics, Eagly (1975) shows that there are more systematic citation flows between journals with a theoretical orientation than between theoretical and applied journals. Similarly, Stigler, Stigler, and Friedland (1995) illustrate the importance of economic theory as an intellectual exporter to applied economics using citation-level data. McCain (1990, 1991) uses cluster analysis to identify the emergence of distinct schools of thought. Recently, network graphs have also been used to illustrate citation patterns. Cronin (2008) uses citations between heterodox journals from 1995 to 2007 to show the changing position of journals within the heterodox group over time. Similarly, Dolfsma and Leydesdorff (2008) use social network analysis to visualize the structural properties of a set of key heterodox journals.

As a first step in the analysis, we use bibliometrics to provide a statistical overview of the citation patterns of the three departments. As a second step, we establish citation networks to visualize the discourse structure and investigate the core-periphery hypothesis by applying tools from social network analysis. We aggregate the publications and citations in our data set to the journal level and treat each journal as one node in the network and citations as edges directed from the journal of publication to the journal cited. The more often a citation directed from one journal to another occurs, the higher the weight of the edge.

In the visualizations of the findings presented in Section Three, this is illustrated by an increased edge width. To create the citation network graphs, we use Gephi software (Bastian, Heymann, and Jacomy 2009), a social network analysis program that provides a variety of options for network visualization and can calculate a broad range of network analysis metrics. In recent years it has been increasingly used for scientometric research (see, for example, Grauwin and Jensen 2011; Horlings and Gurney 2013; Tatry et al. 2014).

The layout chosen for the network graphs is determined with the algorithm ‘Force Atlas 2’.<sup>5</sup> This layout, developed by Jacomy et al. (2014), is widely used in social network analysis (for exemplary applications, see Grauwin and Jensen 2011; Liberman and Wolf 2015). It is a force-directed layout, simulating a physical system with charged particles (nodes) repelling each other, while springs (edges) attract connected particles, which produces the spatialization of the network. The algorithm is non-deterministic and the position of a node can thus not be interpreted on its own but only in relation to others. The layout produces a visualization of structural proximities as spatial proximity in the form of clusters in the network graph. These proximities can be interpreted as communities in which actors (in our case, journals) have denser relations with each other than with the rest of the network. This allows for an intuitive interpretation of the network graphs.

As a final step, we use the unbiased measure called ‘modularity’ proposed by Newman (2006) to detect such communities in the network. Applied to citations, modularity ‘is used to determine the natural grouping of references that cite each other more than is expected by chance’ (Chi and Young 2013, p. 150). Specifically, we apply the widely-

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<sup>5</sup>Specific settings were: Activated Algorithms (Dissuade Hubs, Prevent Overlap, Approximate Repulsion); Edge Weight Influence (1.0); Scaling (2.0); Gravity (1.0); Tolerance [speed] (0.1); Approximation (1.2). In order to ensure comparability between the departments’ networks, all are based on the same settings for the algorithm.



used modularity algorithm by Blondel et al. (2008), which is available in Gephi. Identifying common themes or disciplines of these clusters then builds the basis on which to evaluate the extent of interdisciplinary links in the departments' citation networks.

### 2.3. Data set

The study focuses on all publications of post-doctoral researchers and professors employed at the Econ-WU, SocEcon-WU and Econ-UV in February 2015. To collect the publication and citation data, we extracted the employee data of respective departments from their online databases.

From the employee data, we constructed a search string to retrieve the publications from the Web of Science Core Collection (WoS). As many entries in the database contain only the initial of the first name, the search string was set up accordingly. After this search, the data set covered 3,944 publications. To ensure that the data set included only publications of the researchers employed at the three selected departments and not entries from other authors with the same or a very similar name<sup>6</sup>, publication data from the respective department's online repositories (the WU's BACH database and the IDEAS-RePEc database for the UV) was also retrieved. These sources provided 10,928 publications of various types (including book chapters, reports, etc.), published prior to and during the researchers' employment at the three departments. Merging the two data sets based on their titles and categorizing the journals into heterodox, orthodox and uncategorized groups, based on Lee et al. (2010), yielded the final data set for analysis.<sup>7</sup>

The data set comprises 551 articles and 11,344 citations listed on the Web of Science between 1980 and 2015 and covers 161, 183 and 219 articles by authors who work at the SocEcon-WU, Econ-WU and Econ-UV, respectively.<sup>8</sup> The temporal distribution of publications is similar for all three departments. The mean (median) year of publication is 2006.2 (2008) for the SocEcon-WU, 2007.7 (2009) for the Econ-WU and 2005.2 (2006) for the Econ-UV (see Table A1 in the Appendix).

## 3. Findings

### 3.1. Bibliometric analysis

During their careers, the authors employed at the three departments cited 3,599, 4,459 and 3,868 WoS-listed articles, respectively (see Table 2). For the SocEcon-WU, 24 percent of

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<sup>6</sup>That is, with a string of the following form: '(Lastname<sub>1</sub>, X\*) OR (Lastname<sub>2</sub>, X\*) OR ... OR (Lastname<sub>n</sub>, X\*)'. In the case of double names or two first names, both variants were included in the search string. However, purely initial-based name disambiguation leads to distorted results, as the authors' identity cannot be unreservedly confirmed (Kim and Diesner 2016).

<sup>7</sup>The list comprises 254 journals, of which 62 are heterodox and 192 are orthodox. This raises a number of questions that we have not considered in this study, such as: How does the perceived quality of orthodox and heterodox journals compare? Does the employment requirement for a researcher's output to be considered 'valuable' lead to heterodox economists seeking to publish in orthodox journals?

<sup>8</sup>As the variable including the cited references only contains an abbreviation of the cited journal name, in the next step these abbreviations were matched with the list of abbreviations provided by the Web of Science (2015). All journals that are not included in the Web of Science and thus could not be found with journal abbreviations are not included in the network graphs and statistics. The abbreviations were also checked for possible spelling mistakes, which impede automatic matching, and manually matched to all journals on the Lee et al. (2010) list. The same was done for all abbreviations with more than five citations.

**Table 2.** Citations by department and orthodoxy of cited journal.

		SocEcon-WU		Econ-WU		Econ-UV	
		Number	% of total	Number	% of total	Number	% of total
Citations	O	858	23.84	3,205	71.88	3,012	77.87
	H	425	11.81	139	3.12	113	2.92
	N	2,316	64.35	1,115	25.01	743	19.21
	T	3,599	100	4,459	100	3,868	100

O – Orthodox, H – Heterodox, N – Non-categorized, T – Total.

**Table 3.** H–O citation ratios by department and type of journal.

	SocEcon-WU	Econ-WU	Econ-VU	Total
Orthodox publication	0.222	0.014	0.035	0.034
Heterodox publication	1.762	0.597	0.089	0.729
Non-categorized publication	0.175	0.024	0.024	0.060
Total	0.495	0.043	0.038	0.101

the citations are to orthodox journals, while citations to orthodox journals account for 72 percent at the Econ-WU and 78 percent at the Econ-UV. Conversely, for the SocEcon-WU, 12 percent of the citations are to heterodox journals. In the economics departments, this is only 3 percent. The largest share of citations at the SocEcon-WU is to non-categorized journals (64 percent), whereas this share is only 25 and 19 percent for Econ-WU and Econ-UV, respectively.

A decomposition of the citations by department and by journal category reveals some remarkable differences. To illustrate these differences we calculated the ratio of citations to heterodox journals to citations to orthodox journals:

$$H - O_{\text{citation ratio}} = \frac{\text{Citations to heterodox journals}}{\text{Citations to orthodox journals}}$$

A ratio higher than one denotes more citations to heterodox journals than to orthodox journals and vice versa. Table 3 shows the respective ratios for each journal category and department.

For the total data set, the ratio is 0.101. Thus, overall, authors cite orthodox journals ten times more often than heterodox journals. Orthodox articles are cited more frequently in all three journal categories. With a value of 0.729, the H–O citation ratio of heterodox publications is, however, over 10 times higher than for non-categorized publications (0.060) and over 20 times higher than for orthodox publications (0.034). The ratio is distinctively higher for the SocEcon-WU, with 0.495, compared to 0.043 for the Econ-WU and 0.038 for the Econ-VU, respectively. Considering the department and the journal category together reveals that only heterodox publications of the SocEcon-WU cite heterodox articles more frequently than orthodox ones; the ratio is 1.762.

The calculated H–O citation ratios do not correct for the lower number of heterodox journals in comparison with orthodox journals, which is one reason for the high ratios. However, the lower number of heterodox journals may already be considered one element of a possible peripheral position of heterodox economics.

The ratio of 1.762 can either stem from the different composition of publication outlets between departments or the department itself. To isolate the effect of the department on the H–O citation ratio, the ratio is calculated and compared for journals in which (at least)

**Table 4.** H–O citation ratios for publications in intersecting journals for each department combination.

Journal intersection between departments	SocEcon-WU	Econ-WU	Econ-UV	No. of intersecting journals
SocEcon-WU and Econ-UV	0.542	–	0.043	8
SocEcon-WU and Econ-UV	1.721	0.256	–	14
Econ-UV and Econ-WU	–	0.026	0.038	34

**Table 5.** Network statistics.

	SocEcon-WU	Econ-WU	Econ-UV
Nodes	623	414	375
Unique edges	1,470	1,798	1,549
Network diameter	8	5	5
Average path length	3.506	3.106	2.972
Graph density	0.008	0.021	0.022
Maximum cliques	920	1312	1,036
Size of largest clique	7	10	13

two departments published, and corrected for the number of publications in the respective journals. Table 4 shows the ratios for these data samples.

The decomposition reveals that the H–O citation ratio for the SocEcon-WU is also significantly higher when controlling for the variation in the journals in which publications occur. It is 0.542 for the SocEcon-WU compared to 0.043 for the Econ-UV, and 1.721 for the SocEcon-WU compared to 0.256 for the Econ-WU. This suggests that there is an effect of the actual department on citation patterns.

These findings are indicative of the substantial differences between the SocEcon-WU's and the economics departments' citation patterns. To investigate these differences and to explore whether the discourse structures of the departments follow a core–periphery structure, we analyzed the citation networks of the three departments.

### 3.2. Citation network analysis

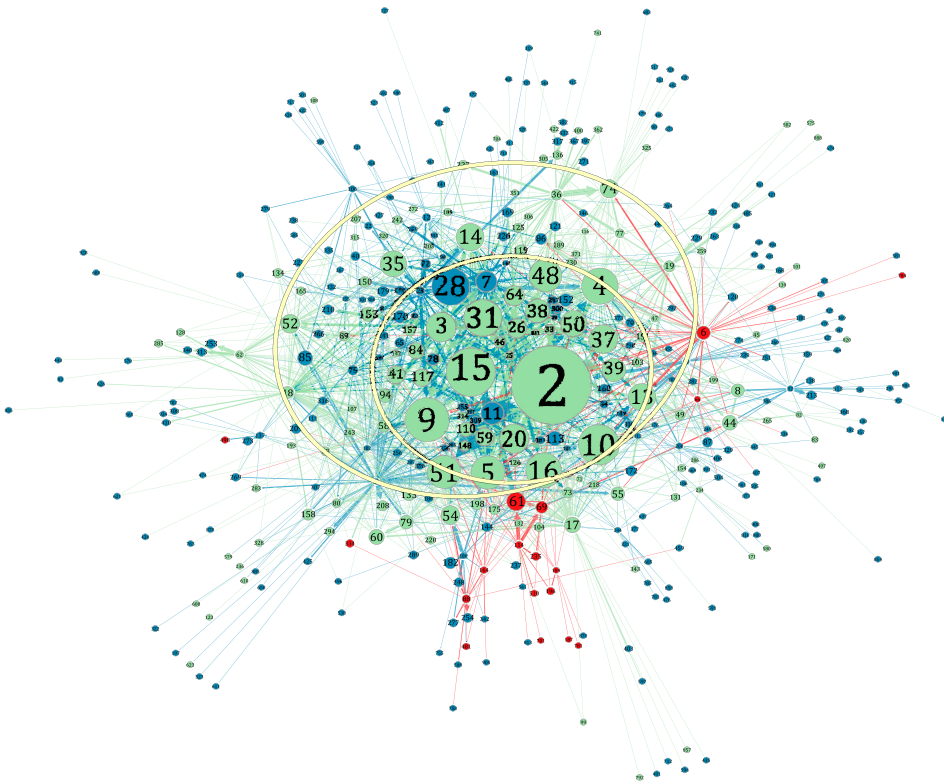
The Econ-WU's network includes 414 nodes (journals) and the Econ-UV's 375; the SocEcon-WU's network is substantially larger, with 623. However, as the network statistics indicate, the network structure of the SocEcon-WU is significantly less dense and cohesive. The network diameter, i.e., the greatest distance between two nodes in the network, is five for the two economics departments compared to eight for the SocEcon-WU. Also the average path length is substantially higher for the latter. Similarly, the graph density, which measures the overall degree of connectedness in the network, is 0.021 and 0.022 for the economics departments and 0.008 for the SocEcon-WU.

Measures on cliques (subsets of nodes that are fully cohesive) indicate that cohesion is lower in the SocEcon-WU as it has a low number of maximum cliques (cliques that are not subsets of other cliques) and its largest clique is smaller than those of Econ-WU and Econ-UV, despite the fact that it has more nodes in its network (Table 5).<sup>9</sup>

Figures 2–4 show the citation network graphs for the three departments. Heterodox journals are colored red (dark-gray), orthodox journals are colored green (light-gray) and non-categorized journals are colored blue (gray).<sup>10</sup> The node size is ranked according

<sup>9</sup>For a detailed description of these network metrics, see, for instance, Kolaczyk and Csárdi (2014).

<sup>10</sup>Please refer to the online version of the article for the figures in color.

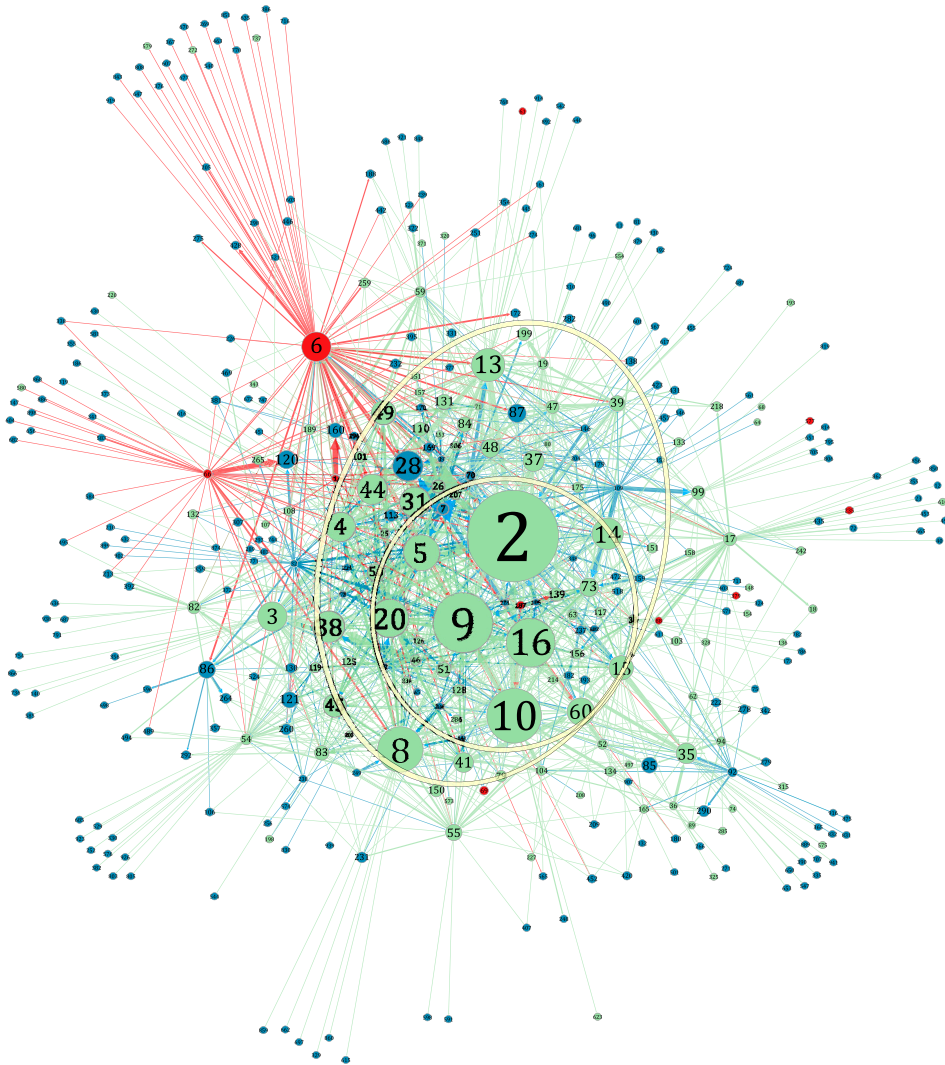


**Figure 2.** Citation network of the Econ-WU. Green (light-gray): orthodox journals. Red (dark-gray): heterodox journals. Blue (gray): non-categorized journals. Node size: weighted in-degree. Edge width: number of citations. Number: journal ID; see [Table A4, Appendix](#).

to the weighted in-degree, i.e., the number of connections directed to the respective node, weighted by the respective frequency (for a ranking by weighted in-degree, see [Table A3](#)). The journals corresponding to the ID numbers on the nodes can be found in [Table A4](#) in the [Appendix](#). Below, the ID numbers are listed in brackets next to the journal name.

The key feature of the citation networks for the two economics departments is that they reveal a similar ‘orthodox core–heterodox periphery’ structure. This is underlined by the yellow (bold) ellipses added to the network graphs. Orthodox journals predominantly lie within them, while heterodox journals and non-categorized journals tend to be located in the periphery of the networks.

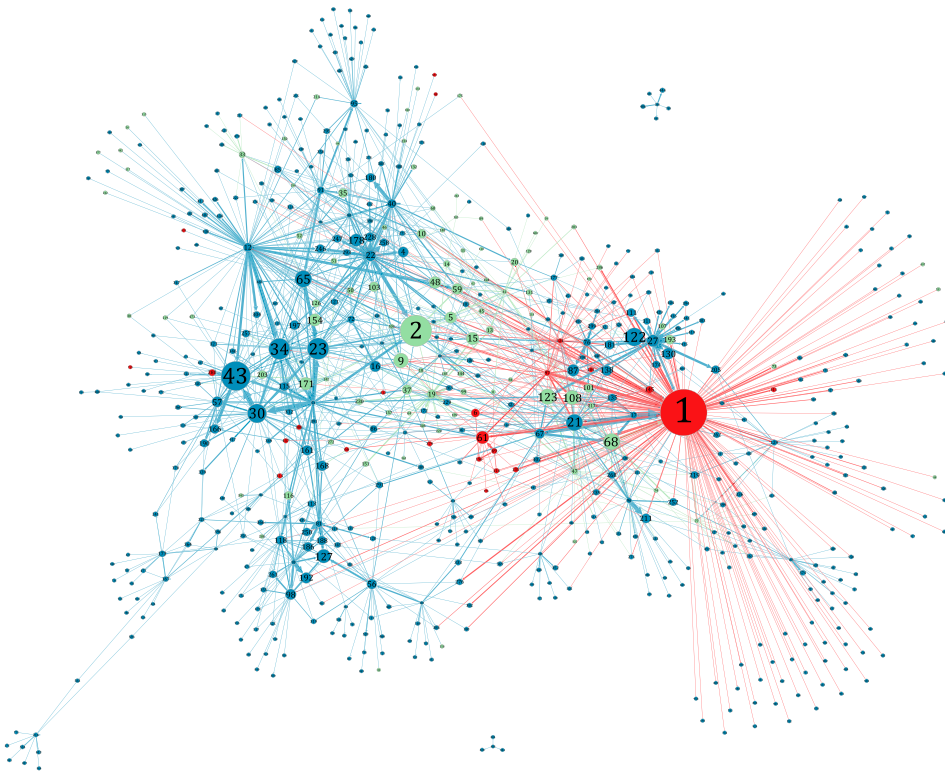
The dominant core of the networks consists of several heavily cited orthodox journals. For both economics departments, the *American Economic Review* (2) is the most important journal in this respect. Together with the *Quarterly Journal of Economics* (9), *Econometrica* (10), as well as the *Review of Economics and Statistics* (15) for the Econ-WU and the *Journal of Political Economy* (16) for the Econ-UV, it constitutes the center of the core group. The primary heterodox journal present in both networks is the *Journal of Economic Behavior and Organization* (6), which is located in the periphery but shows strong ties to the core of the network. The *Journal of Evolutionary Economics* (66) is located next to it. The most relevant non-categorized journal in both departments is the *Journal of Finance* (28).



**Figure 3.** Citation network of the Econ-UV. Green (light-gray): orthodox journals. Red (dark-gray): heterodox journals. Blue (gray): non-categorized journals. Node size: weighted in-degree. Edge width: number of citations. Number: journal ID; see [Table A4](#), [Appendix](#).

At the Econ-WU there is a small heterodox group around the *Cambridge Journal of Economics* (61) and *Metroeconomica* (69), which exhibits significantly weaker ties to the core than the heterodox journals discussed previously. Moreover, there are two other major non-categorized journals at the core of the network, namely, the *Journal of Corporate Finance* (7) and the *Journal of International Business Studies* (11).

The structure of the SocEcon-WU's citation network differs substantially. It is less dense and does not follow a core-periphery structure. It is composed of a number of distinct clusters that are strongly connected within but relatively loosely connected to other groups. While the orthodox core group around the *American Economic Review* (2) is present, it is not dominant as is the case for the economics departments.



**Figure 4.** Citation network of the SocEcon-WU. Green (light-gray): orthodox journals. Red (dark-gray): heterodox journals. Blue (gray): non-categorized journals. Node size: weighted in-degree. Edge width: number of citations. Number: journal ID; see [Table A4](#), [Appendix](#).

Non-categorized journals play a major role. The greater importance of the heterodox group at the SocEcon-WU is strongly linked to *Ecological Economics* (1), which is the most important journal in the network. There are significantly more heterodox journals present in the network than for the economics departments; however, the *Cambridge Journal of Economics* is the only other heterodox journal ranked under the Top 20 in terms of weighted in-degree. The most important non-categorized journals include *Environmental Values* (21), *Climate Change* (122), *Urban Studies* (43), *Regional Studies* (23) and *European Planning Studies* (30).

The dominant journals cited by the three departments suggest that the departments not only differ with respect to the role of heterodox and non-categorized journals within their networks, but also focus on different research areas. In the following, we use the modularity algorithm to identify clusters in the network in order to investigate the thematic and disciplinary orientation of the departments.

### 3.3. Citation community analysis

Only 25 percent of citations at the Econ-WU and 19 percent at the Econ-UV are to non-categorized journals (see [Table A2](#)). This is indicative of a mono-disciplinary research focus. In contrast, non-categorized journals are of great importance at the SocEcon-

WU. They account for 73 percent of publications and 64 percent of citations. The results from the modularity algorithm further underline that the SocEcon-WU's citation network is organized more poly-centrally than the economics departments' networks. For the SocEcon-WU it shows an overall modularity score of 0.592 and 13 communities, compared to 0.383 and 9 communities for the Econ-WU, and 0.333 and 11 communities for the Econ-UV. In [Figures 5–7](#) each community is illustrated with a different color; the caption indicates the thematic areas of the modules.<sup>11</sup>

In the economics departments, the modules are ordered in circles around the center of the network. Identifying specific thematic areas within the modules is not straightforward, as most clusters contain many (orthodox) general-interest economics journals. Those thematic areas that can be identified largely remain within the disciplinary boundaries of economics. Clusters dominated by other disciplines tend to be very small and are located at the periphery of the network.

In contrast, the SocEcon-WU's network consists of a large number of distinct modules. Each cluster is dominated by distinct disciplines, topics and schools of thought. These include clusters focused on environmental and ecological issues; regional studies and geography; social policy; psychology; and business and management. This is consistent with the interdisciplinary research focus of the department.

#### 4. Discussion

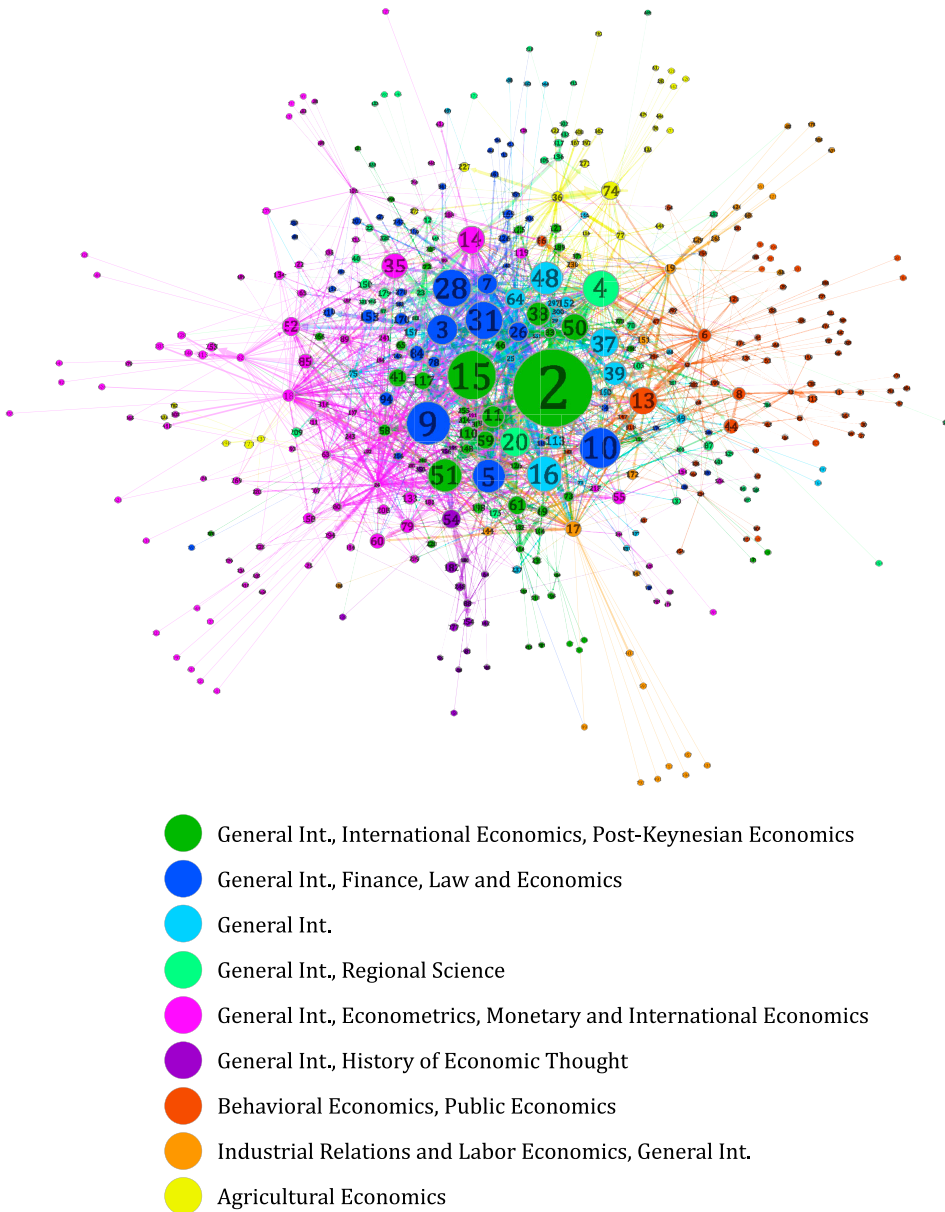
The results from the case study show that articles published in orthodox journals barely cite articles in heterodox journals. In contrast, articles published in heterodox journals cite heterodox journals more frequently; nevertheless, more references in heterodox articles are to orthodox than heterodox journals. This finding aligns with Dobusch and Kapeller's (2012a) notion of a 'paradigmatic self-marginalization', as the mainstream constitutes an important point of reference for heterodox economists while heterodox research is disregarded by the mainstream. In addition, there is relatively little interaction between heterodox researchers. This may reinforce the dominant position of the mainstream, due to the increasingly important role of rankings and bibliometric indices in academia, which tend to be skewed towards the mainstream in economics (Lee 2008; Lee and Elsner 2008; Kapeller 2010).

Further, a substantial difference between the two economics departments and the SocEcon-WU can be observed. The vast majority of citations of the economics departments are to orthodox journals and virtually zero citations are to heterodox journals. At the SocEcon-WU, the share of citations to heterodox journals is markedly higher. Nonetheless, orthodox outlets are still cited around twice as frequently. This department seems to have a direct effect on citation patterns, as articles published by authors from the SocEcon-WU cite heterodox journals significantly more often than articles published in the same journals by authors employed at the two economics departments. Only articles published in heterodox outlets by authors employed at the SocEcon-WU cite heterodox journals more frequently than orthodox ones.

These findings are substantiated by the analysis of the department-level citation networks. Both economics departments closely follow the 'orthodox core-heterodox

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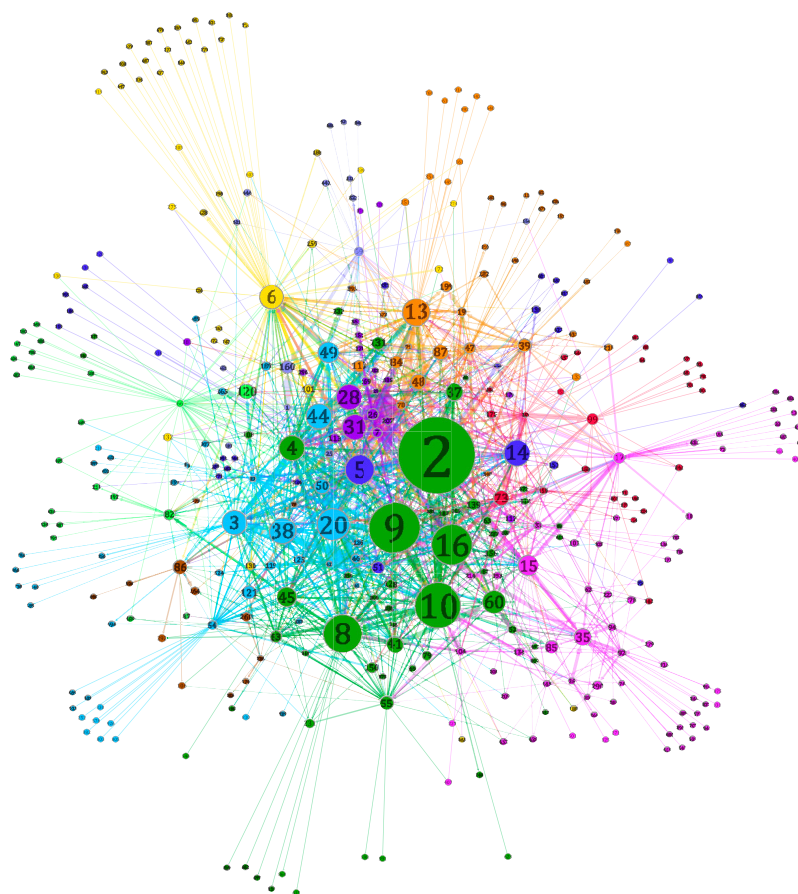
<sup>11</sup>Please refer to the online version of the article for the figures in color.



**Figure 5.** Citation networks of Econ-WU. Color according to modularity class (please refer to digital version of the article). Categorized according to dominant discipline, topic and school of thought. Node size: weighted in-degree. Edge width: number of citations. Number: journal ID; see [Table A4, Appendix](#).

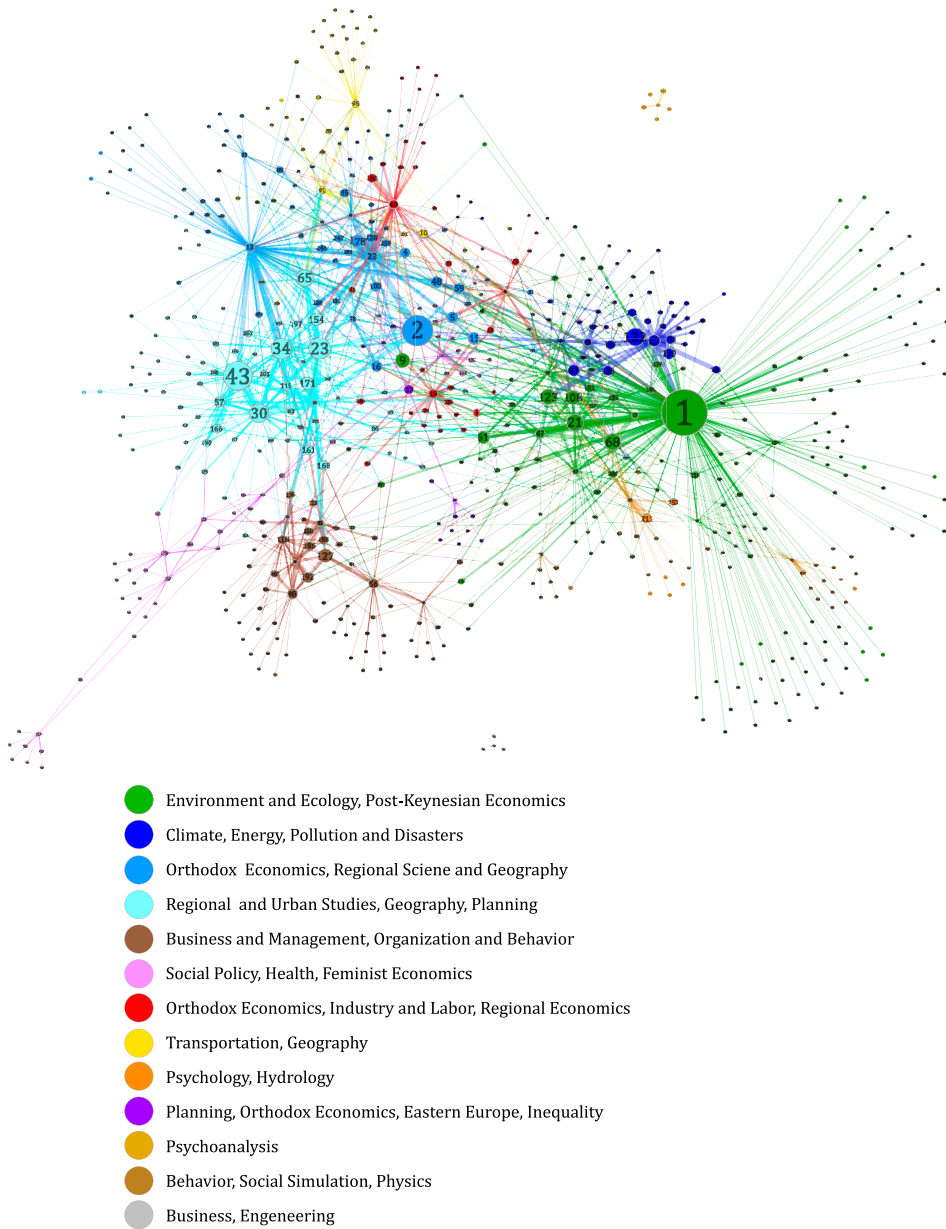
periphery' structure suggested in the literature and illustrated schematically by Dobusch and Kapeller (2012b). The citation networks of both departments are mono-centric, where the center is made up of a few heavily-cited orthodox journals. Heterodox journals are located in the periphery. The heterodox journals that exhibit the strongest ties to the orthodox core are the *Journal of Economic Behavior and Organization* and the





-  General Int., Economic Theory, Modelling
-  General Int., Industrial Economics, Behavioral Economics
-  Finance and Financial Economics
-  General Int.
-  General Int., Econometrics, Regional Science
-  General Int., Public Economics
-  Behavioral Economics
-  World Economics and Development
-  Management and Marketing
-  General Int., Environment, Legal Studies
-  Political Science, Evolutionary Economics, Behavioral Economics

**Figure 6.** Citation networks of Econ-UV. Color according to modularity class (please refer to digital version of the article). Categorized according to dominant discipline, topic and school of thought. Node size: weighted in-degree. Edge width: number of citations. Number: journal ID; see [Table A4, Appendix](#).



**Figure 7.** Citation networks of SocEcon-WU. Color according to modularity class (please refer to digital version of the article). Categorized according to dominant discipline, topic and school of thought. Node size: weighted in-degree. Edge width: number of citations. Number: journal ID; see [Table A4](#), [Appendix](#).

*Journal of Evolutionary Economics*. This is consistent with the notions of ‘mainstream heterodoxy’ (Davis 2008), ‘inside-the-mainstream’ heterodoxy (Colander, Holt, and Rosser 2004, 2010) and ‘mainstream dissent’ (Dobusch and Kapeller 2012b) attributed to behavioral economics and evolutionary economics. The community analysis of the networks further suggests that both economics departments have a strong mono-disciplinary focus. The comparatively low number of citations to non-categorized journals lends

support to this finding. The most important non-categorized journals in the economics departments' networks are finance and business journals.

The results for the two economics departments suggest that the mainstream in economics is isolated both with respect to research from other schools of thought and other disciplines. This is consistent with a mono-paradigmatic structure of economics as suggested by Varga (2011), as well as Pieters and Baumgartner's (2002) and Fourcarde, Ollion, and Algan's (2015) observation that economics tends to exhibit few ties to other social science disciplines. Such isolation may constitute a barrier for innovation within economics, as interdisciplinary and heterodox approaches seem to be discounted *a priori*. Moreover, they may constitute a barrier for critical issues such as climate change that would merit more attention within economic discourse.

The SocEcon-WU's citation network differs from those of the economics departments in many respects. The network is poly-centric with many spatially distinct hubs and does not follow a core-periphery structure. Other than at the economics departments, the orthodox group of journals is not dominant in the network, while heterodox journals play a substantially more important role. The high share of citations to non-categorized journals as well as the modularity analysis indicate that the SocEcon-WU's research focus is interdisciplinary. The network includes clusters dominated by journals in the areas of the environment and ecology; regional studies and geography; social policy; psychology; and business and management.

These findings are markedly different from the isolation observable for the two mainstream departments. The greater openness to alternative and heterodox approaches goes hand-in-hand with a greater openness to work from a broad variety of subject areas and disciplines (see also, Dolfsma and Leydesdorff 2008).

## 5. Conclusions

Mainstream economics departments reveal an 'orthodox core-heterodox periphery' structure in their citation behavior. They are characterized by a double isolation from research of both other schools of thought and other disciplines, which constitutes a barrier to innovation and entails a neglect of critical interdisciplinary issues such as climate change.

This closed community structure of mainstream economics makes it difficult for heterodox economics to thrive. It may, however, at the same time present an opportunity for the future development of heterodox economics. A closer collaboration with other disciplines and a research focus on important policy-relevant interdisciplinary challenges appears to be a viable strategy. This closely relates to Colander's (2014) suggestion that heterodox economists should pursue a pluralism that incorporates a greater blending of social sciences. While this strategy may also be fruitful for individual heterodox researchers, this article highlights the potential of such a collaboration at the department level and provides an example of a university department that has institutionalized an interdisciplinary and heterodox approach.

While the Department of Socioeconomics at the WU may be seen as a potential role model, it also reveals weaknesses. In order to be successful, heterodox economists must cease to use the mainstream as the main point of reference and thereby strengthen their position in the logic of citation metrics. Heterodox schools of thought should try

to increase communication between each other and with other disciplines. In particular, existing heterodox departments should consider collaboration with other social science departments at their universities, in addition to collaboration with other heterodox departments. This includes cross-disciplinary conferences, and project proposal collaboration with other disciplines and schools of thought.

This article is the first to investigate the discourse structure of economics at the level of a university department and the first to apply social network analysis to investigate the existence of a core–periphery pattern in the paradigmatic discourse structure. There are valuable insights from such case studies and additional investigations in this area may prove a fruitful avenue for future research. The combination of bibliometric methods and social network analysis applied in this article provides a framework for further studies to investigate the discourse in economics generally.

### Disclosure statement

No potential conflict of interest was reported by the authors.

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## Appendix

**Table A1.** Temporal distribution of publications.

Department	Mean	Min	1st quartile	Median	3rd quartile	Max
SocEcon-WU	2006.2	1980	2002	2008	2012	2014
Econ-WU	2007.7	1982	2004	2009	2013	2015
Econ-UV	2005.2	1986	2001	2006	2011	2014

**Table A2.** Citations and journals cited by department and journal category.

		SocEcon-WU (%)		Econ-WU (%)		Econ-UV (%)		Total (%)	
		absolute	%	absolute	%	absolute	%	absolute	%
Orthodox publication	O	176	50.57	2025	77.32	2014	79.14	3893	76.51
	H	39	11.21	28	1.07	70	2.75	131	2.57
	N	133	38.22	566	21.61	461	18.11	1064	20.91
	T	348	100	2619	100	2545	100	5088	100
	R	0.222		0.074		0.035-		0.034-	
Heterodox publication	O	168	18.18	144	49.66	292	67.13	560	35.07
	H	296	32.03	86	29.66	26	5.98	408	25.55
	N	460	49.78	60	20.69	117	26.90	629	39.39
	T	924	100	290	100	435	100	1597	100
	R	1.762		0.597		0.089		0.729	
Non-categorized publication	O	514	22.09	1036	66.84	706	79.50	2190	47.01
	H	90	3.87	25	1.61	17	1.91	132	2.83
	N	1723	74.04	489	31.55	165	18.58	2337	50.16
	T	2327	100	1550	100	888	100	4659	100
	R	0.175		0.024		0.024		0.06	
Total	O	858	23.84	3205	71.88	3012	77.87	6643	58.56
	H	425	11.81	139	3.12	113	2.92	671	5.92
	N	2316	64.35	1115	25.01	743	19.21	4030	35.53
	T	3599	100	4459	100	3868	100	11344	100
	R	0.495		0.043		0.038		0.101	
Total journals cited	O	99	16.12	134	33.58	114	30.89	147	15.79
	H	24	3.91	18	4.51	10	2.71	33	3.54
	N	491	79.97	247	61.90	245	66.40	751	80.67
	T	614	100	399	100	369	100	931	100
	R	0.242		0.134		0.088		0.224	

O – Orthodox, H – Heterodox, N – Non-categorized, T – Total, R – H–O citation ratio.

**Table A3.** Journal rankings by weighted in-degree.

Rank	SocEcon-WU	Econ-WU	Econ-UV
1	<b>ECOLOGICAL ECONOMICS (1)</b>	AMERICAN ECONOMIC REVIEW (2)	AMERICAN ECONOMIC REVIEW (2)
2	AMERICAN ECONOMIC REVIEW (2)	REVIEW OF ECONOMICS AND STATISTICS (15)	QUARTERLY JOURNAL OF ECONOMICS (9)
3	<i>URBAN STUDIES (43)</i>	QUARTERLY JOURNAL OF ECONOMICS (9)	ECONOMETRICA (10)
4	<i>REGIONAL STUDIES (23)</i>	ECONOMETRICA (10)	JOURNAL OF POLITICAL ECONOMY (16)
5	<i>RESEARCH POLICY (34)</i>	JOURNAL OF FINANCIAL ECONOMICS (31)	JOURNAL OF ECONOMIC THEORY (8)
6	<i>EUROPEAN PLANNING STUDIES (30)</i>	<i>JOURNAL OF FINANCE (28)</i>	REVIEW OF ECONOMIC STUDIES (20)
7	<i>CLIMATIC CHANGE (122)</i>	EUROPEAN ECONOMIC REVIEW (4)	ECONOMIC JOURNAL (5)
8	<i>ENVIRONMENT AND PLANNING (65)</i>	JOURNAL OF POLITICAL ECONOMY (16)	JOURNAL OF PUBLIC ECONOMICS (13)
9	<i>ENVIRONMENTAL VALUES (21)</i>	ECONOMIC JOURNAL (5)	RAND JOURNAL OF ECONOMICS (38)
10	LAND ECONOMICS (68)	JOURNAL OF INTERNATIONAL ECONOMICS (51)	ECONOMICS LETTERS (14)
11	ENVIRONMENTAL AND RESOURCE ECONOMICS (123)	JOURNAL OF ECONOMIC LITERATURE (48)	GAME AND ECONOMIC BEHAVIOR (44)
12	QUARTERLY JOURNAL OF ECONOMICS (9)	INTERNATIONAL JOURNAL OF INDUSTRIAL ORGANIZATION (3)	<i>JOURNAL OF FINANCE (28)</i>
13	JOURNAL OF ENVIRONMENTAL ECONOMICS AND MANAGEMENT (108)	REVIEW OF ECONOMIC STUDIES (20)	JOURNAL OF FINANCIAL ECONOMICS (31)
14	<i>ACADEMY OF MANAGEMENT REVIEW (127)</i>	JOURNAL OF ECONOMIC PERSPECTIVES (37)	EUROPEAN ECONOMIC REVIEW (4)
15	<b>CAMBRIDGE JOURNAL OF ECONOMICS (61)</b>	ECONOMICS LETTERS (14)	INTERNATIONAL JOURNAL OF INDUSTRIAL ORGANIZATION (3)
16	REVIEW OF ECONOMICS AND STATISTICS (15)	JOURNAL OF PUBLIC ECONOMICS (13)	<b>JOURNAL OF ECONOMIC BEHAVIOR AND ORGANIZATION (6)</b>
17	INDUSTRIAL AND CORPORATE CHANGE (171)	JOURNAL OF INDUSTRIAL ECONOMICS (50)	JOURNAL OF MONETARY ECONOMICS (60)
18	PHOTOGRAMMETRIC ENGINEERING AND REMOTE SENSING (178)	JOURNAL OF ECONOMETRICS (35)	EXPERIMENTAL ECONOMICS (49)
19	JOURNAL OF ECONOMIC GEOGRAPHY (154)	RAND JOURNAL OF ECONOMICS (38)	REVIEW OF ECONOMICS AND STATISTICS (15)
20	<i>GLOBAL ENVIRONMENTAL CHANGE HUMAN AND POLICY DIMENSIONS (27)</i>	PUBLIC CHOICE (39)	ECONOMIC THEORY (45)

Heterodox journals are indicated in **bold** letters; non-categorized journals are indicated in *italics*.



**Table A4.** Journal IDs.

1	ECOLOGICAL ECONOMICS	39	PUBLIC CHOICE	74	AMERICAN JOURNAL OF AGRICULTURAL ECONOMICS
2	AMERICAN ECONOMICS REVIEW	40	PAPERS IN REGIONAL SCIENCE	75	JOURNAL OF INTERNATIONAL MONEY AND FINANCE
3	INTERNATIONAL JOURNAL OF INDUSTRIAL ORGANIZATION	41	INTERNATIONAL ECONOMIC REVIEW	76	RISK ANALYSIS
4	EUROPEAN ECONOMIC REVIEW	42	JOURNAL OF THE EUROPEAN ECONOMIC ASSOCIATION	77	JOURNAL OF AGRICULTURAL ECONOMICS
5	ECONOMIC JOURNAL	43	URBAN STUDIES	78	TELECOMMUNICATIONS POLICY
6	JOURNAL OF ECONOMIC BEHAVIOR AND ORGANIZATION	44	GAME AND ECONOMIC BEHAVIOR	79	JOURNAL OF MONEY CREDIT AND BANKING
7	JOURNAL OF CORPORATE FINANCE	45	ECONOMIC THEORY	80	JOURNAL OF POLICY MODELING
8	JOURNAL OF ECONOMIC THEORY	46	EMPIRICAL ECONOMICS	81	ORGANIZATION STUDIES
9	QUARTERLY JOURNAL OF ECONOMICS	47	JOURNAL OF ECONOMIC PSYCHOLOGY	82	INTERNATIONAL JOURNAL OF GAME THEORY
10	ECONOMETRICA	48	JOURNAL OF ECONOMIC LITERATURE	83	JOURNAL OF MATHEMATICAL ECONOMICS
11	JOURNAL OF INTERNATIONAL BUSINESS STUDIES	49	EXPERIMENTAL ECONOMICS	84	SOUTHERN ECONOMIC JOURNAL
12	ANNALS OF REGIONAL SCIENCE	50	JOURNAL OF INDUSTRIAL ECONOMICS	85	JOURNAL OF THE AMERICAN STATISTICAL ASSOCIATION
13	JOURNAL OF PUBLIC ECONOMICS	51	JOURNAL OF INTERNATIONAL ECONOMICS	86	MANAGEMENT SCIENCE
14	ECONOMICS LETTERS	52	JOURNAL OF APPLIED ECONOMETRICS	87	SCIENCE
15	REVIEW OF ECONOMICS AND STATISTICS	53	MITTEILUNGEN DER OSTERREICHISCHEN GEOGRAPHISCHEN GESELLSCHAFT	88	HISTORY OF POLITICAL ECONOMY
16	JOURNAL OF POLITICAL ECONOMY	54	ECONOMICA	89	APPLIED ECONOMICS LETTERS
17	JOURNAL OF ECONOMIC SURVEYS	55	JOURNAL OF ECONOMIC DYNAMICS AND CONTROL	90	JOURNAL OF GEOGRAPHICAL SYSTEMS
18	APPLIED ECONOMICS	56	JOURNAL OF BUSINESS ETHICS	91	PROGRESS IN HUMAN GEOGRAPHY
19	KYKLOS	57	EUROPEAN URBAN AND REGIONAL STUDIES	92	JOURNAL OF FORECASTING
20	REVIEW OF ECONOMIC STUDIES	58	REVIEW OF WORLD ECONOMICS	93	JOURNAL OF OCCUPATIONAL AND ORGANIZATIONAL PSYCHOLOGY
21	ENVIRONMENTAL VALUES	59	SCANDINAVIAN JOURNAL OF ECONOMICS	94	OXFORD BULLETIN OF ECONOMICS AND STATISTICS
22	GEOGRAPHICAL ANALYSIS	60	JOURNAL OF MONETARY ECONOMICS	95	TRANSPORTATION RESEARCH PART A POLICY AND PRACTICE
23	REGIONAL STUDIES	61	CAMBRIDGE JOURNAL OF ECONOMICS	96	JOURNAL OF APPLIED SOCIAL PSYCHOLOGY
24	EMPIRICA	62	ECONOMIC MODELLING	97	AMERICAN JOURNAL OF ECONOMICS AND SOCIOLOGY
25	INTERNATIONAL REVIEW OF LAW AND ECONOMICS	63	JOURNAL OF MACROECONOMICS	98	ENTREPRENEURSHIP THEORY AND PRACTICE
26	JOURNAL OF LAW AND ECONOMICS	64	JOURNAL OF COMPARATIVE ECONOMICS	99	WORLD DEVELOPMENT
27	GLOBAL ENVIRONMENTAL CHANGE HUMAN AND POLICY DIMENSIONS	65	ENVIRONMENT AND PLANNING A	100	HISTORY OF ECONOMIC IDEAS
28	JOURNAL OF FINANCE	66	JOURNAL OF EVOLUTIONARY ECONOMICS	101	JOURNAL OF RISK AND UNCERTAINTY
29	JOURNAL OF INSTITUTIONAL AND THEORETICAL ECONOMICS ZEITSCHRIFT FÜR DIE GESAMTE STAATSWISSENSCHAFT	67	ENVIRONMENT AND PLANNING C GOVERNMENT AND POLICY	102	WORLD ECONOMY
30	EUROPEAN PLANNING STUDIES	68	LAND ECONOMICS	103	JOURNAL OF REGIONAL SCIENCE
31	JOURNAL OF FINANCIAL ECONOMICS	69	METROECONOMICA	104	MACROECONOMIC DYNAMICS
32	GAMES AND ECONOMIC BEHAVIOR	70	CANADIAN JOURNAL OF ECONOMICS REVUE CANADIENNE D'ECONOMIQUE	105	AMERICAN ECONOMIC REVIEW
33	REGIONAL SCIENCE AND URBAN ECONOMICS	71	FINANZARCHIV	106	EUROPEAN JOURNAL OF OPERATIONAL RESEARCH
34	RESEARCH POLICY	72	INTERNATIONAL REGIONAL SCIENCE REVIEW	107	ENERGY ECONOMICS
35	JOURNAL OF ECONOMETRICS	73	JOURNAL OF DEVELOPMENT ECONOMICS	108	JOURNAL OF ENVIRONMENTAL ECONOMICS AND MANAGEMENT
36	EUROPEAN REVIEW OF AGRICULTURAL ECONOMICS			109	ANNUAL REVIEW OF RESOURCE ECONOMICS
37	JOURNAL OF ECONOMIC PERSPECTIVES				
38	RAND JOURNAL OF ECONOMICS				

*(Continued)*

**Table A4.** Continued.

110	JOURNAL OF EUROPEAN ECONOMICS ASSOCIATION	145	ECONOMIC SYSTEMS RESEARCH	178	PHOTOGRAMMETRIC ENGINEERING AND REMOTE SENSING
111	ENERGY POLICY	146	EUROPEAN JOURNAL OF POLITICAL ECONOMY	179	REVIEW OF FINANCIAL STUDIES
112	OXFORD ECONOMIC PAPERS NEW SERIES	147	PUBLIC FINANCE QUARTERLY	180	BIOMETRIKA
113	STRATEGIC MANAGEMENT JOURNAL	148	SCOTTISH JOURNAL OF POLITICAL ECONOMY	181	CLIMATE POLICY
114	STRUCTURAL CHANGE AND ECONOMIC DYNAMICS	149	CORPORATE SOCIAL RESPONSIBILITY AND ENVIRONMENTAL MANAGEMENT	182	ECONOMIST
115	INDUSTRY AND INNOVATION	150	JOURNAL OF ECONOMIC GROWTH	183	BULLETIN OF ECONOMIC RESEARCH
116	SMALL BUSINESS ECONOMICS	151	JOURNAL OF LABOR ECONOMICS	184	JOURNAL OF ECONOMIC ISSUES
117	BROOKINGS PAPERS OF ECONOMIC ACTIVITY	152	ADJUSTMENT LENDING REVISITED	185	JOURNAL OF PRODUCTIVITY ANALYSIS
118	ENTREPRENEURSHIP AND REGIONAL DEVELOPMENT	153	JOURNAL OF BANKING AND FINANCE	186	ACADEMY OF MANAGEMENT JOURNAL
119	REVIEW OF INDUSTRIAL ORGANIZATION	154	JOURNAL OF ECONOMIC GEOGRAPHY	187	ECONOMICS AND PHILOSOPHY
120	AMERICAN POLITICAL SCIENCE REVIEW	155	JOURNAL OF INTERNATIONAL FINANCIAL MARKETS INSTITUTIONS AND MONEY	188	JOURNAL OF APPLIED PSYCHOLOGY
121	BELL JOURNAL OF ECONOMICS	156	JOURNAL OF POPULATION ECONOMICS	189	JOURNAL OF LAW ECONOMICS AND ORGANIZATION
122	CLIMATIC CHANGE	157	OXFORD REVIEW OF ECONOMIC POLICY	190	KURSWECHSEL
123	ENVIRONMENTAL AND RESOURCE ECONOMICS	158	WORLD ECONOMICS	191	NORTH AMERICAN JOURNAL OF ECONOMICS AND FINANCE
124	NEW POLITICAL ECONOMY	159	B E JOURNAL OF ECONOMIC ANALYSIS AND POLICY	192	JOURNAL OF BUSINESS VENTURING
125	JOURNAL OF ECONOMICS AND MANAGEMENT STRATEGY	160	JOURNAL OF LEGAL STUDIES	193	ENERGY JOURNAL
126	JOURNAL OF URBAN ECONOMICS	161	AMERICAN JOURNAL OF SOCIOLOGY	194	INTERNATIONAL FINANCE
127	ACADEMY OF MANAGEMENT REVIEW	162	JOURNAL OF CREDIT RISK	195	JOURNAL OF COMPETITION LAW AND ECONOMICS
128	REVIEW OF ECONOMIC DYNAMICS	163	JOURNAL OF HYDROLOGY	196	JOURNAL OF POST KEYNESIAN ECONOMICS
129	ECOLOGY AND SOCIETY	164	EUROPEAN JOURNAL OF THE HISTORY OF ECONOMIC THOUGHT	197	JOURNAL OF TECHNOLOGY TRANSFER
130	PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA	165	INTERNATIONAL JOURNAL OF FORECASTING	198	MANCHESTER SCHOOL
131	ECONOMIC INQUIRY	166	INTERNATIONAL JOURNAL OF URBAN AND REGIONAL RESEARCH	199	NATIONAL TAX JOURNAL
132	JOURNAL OF ECONOMICS	167	SOCIAL POLICY AND ADMINISTRATION	200	COMPUTATIONAL ECONOMICS
133	ECONOMIC POLICY	168	ADMINISTRATIVE SCIENCE QUARTERLY	201	ECONOMIA POLITICA
134	JOURNAL OF BUSINESS AND ECONOMIC STATISTICS	169	CORPORATE GOVERNANCE AN INTERNATIONAL REVIEW	202	ECONOMIC AND LABOUR RELATIONS REVIEW
135	ENVIRONMENTAL SCIENCE AND TECHNOLOGY	170	FINANCIAL MANAGEMENT	203	ECONOMIC GEOGRAPHY
136	JOURNAL OF COMMON MARKET STUDIES	171	INDUSTRIAL AND CORPORATE CHANGE	204	ECONOMICS OF GOVERNANCE
137	SOCIAL SCIENCE AND MEDICINE	172	INDUSTRIAL AND LABOR RELATIONS REVIEW	205	ENVIRONMENTAL SCIENCE AND POLICY
138	NATURE	173	JOURNAL OF EUROPEAN SOCIAL POLICY	206	JAPANESE ECONOMIC REVIEW
139	THEORY AND DECISION	174	JOURNAL OF INDUSTRIAL ECOLOGY	207	JOURNAL OF FINANCIAL AND QUANTITATIVE ANALYSIS
140	EUROPEAN BUSINESS ORGANIZATION LAW REVIEW	175	OXFORD ECONOMIC PAPERS	208	LABOUR ECONOMICS
141	HEALTH CARE MANAGEMENT SCIENCE	176	SPATIAL ECONOMIC ANALYSIS	209	BROOKINGS PAPERS ON ECONOMIC ACTIVITY
142	INFORMATION ECONOMICS AND POLICY	177	ENVIRONMENTAL ETHICS	210	JOURNAL OF ECONOMICS AND BUSINESS
143	JOURNAL OF ECONOMICS ZEITSCHRIFT FÜR NATIONALOKONOMIE			211	JOURNAL OF ENVIRONMENTAL PSYCHOLOGY
144	WELTWIRTSCHAFTLICHES ARCHIV REVIEW OF WORLD ECONOMICS			212	JOURNAL OF PLANNING EDUCATION AND RESEARCH
				213	JOURNAL OF THEORETICAL BIOLOGY
				214	JOURNAL OF TRANSPORT ECONOMICS AND POLICY
				215	PSICOTHEMA
				216	EUROPEAN JOURNAL OF HEALTH ECONOMICS

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**Table A4.** Continued.

217	FUTURES	249	INTERNATIONAL JOURNAL OF ECONOMIC THEORY	289	INTERNATIONAL MONETARY FUND STAFF PAPERS
218	INTERNATIONAL TAX AND PUBLIC FINANCE	250	JOURNAL OF ORGANIZATIONAL BEHAVIOR	290	JOURNAL OF TIME SERIES ANALYSIS
219	JOURNAL OF ENVIRONMENTAL MANAGEMENT	251	JOURNAL OF PERSONALITY AND SOCIAL PSYCHOLOGY	291	LONG RANGE PLANNING
220	JOURNAL OF JAPANESE AND INTERNATIONAL ECONOMICS	252	JOURNAL OF SOCIAL ISSUES	292	MATHEMATICS OF OPERATIONS RESEARCH
221	JOURNAL OF SOCIAL POLICY	253	TOURISM MANAGEMENT	293	NEUROCOMPUTING
222	JOURNAL OF THE ROYAL STATISTICAL SOCIETY SERIES B METHODOLOGICAL	254	ZEITSCHRIFT FÜR NATIONALÖKONOMIE	294	OPEN ECONOMIES REVIEW
223	POPULATION AND ENVIRONMENT	255	GROWTH AND CHANGE	295	TRANSPORTATION RESEARCH PART B METHODOLOGICAL
224	ZBORNIK RADOVA EKONOMSKOG FAKULTETA U RIJECI PROCEEDINGS OF RIJEKA FACULTY OF ECONOMICS	256	HARVARD BUSINESS REVIEW	296	YALE LAW JOURNAL
225	ADAPTIVE BEHAVIOR	257	INNOVATION NETWORKS	297	ACTA OECOMICA
226	ANNALS OF ECONOMIC AND SOCIAL MEASUREMENT	258	INTERNATIONAL JOURNAL OF REMOTE SENSING	298	AMERICAN STATISTICIAN
227	ECONOMETRIC THEORY	259	JOURNAL OF INSTITUTIONAL AND THEORETICAL ECONOMICS	299	EARTHQUAKE SPECTRA
228	IEEE TRANSACTIONS ON GEOSCIENCE AND REMOTE SENSING	260	JOURNAL OF MARKETING RESEARCH	300	EAST EUROPEAN POLITICS AND SOCIETIES
229	INDUSTRIAL RELATIONS	261	JOURNAL OF SMALL BUSINESS MANAGEMENT	301	ENVIRONMENT AND PLANNED SOCIETY AND SPACE
230	JOURNAL OF HUMAN RESOURCES	262	LAND USE POLICY	302	ENVIRONMENTAL POLITICS
231	JOURNAL OF OPTIMIZATION THEORY AND APPLICATIONS	263	NONPROFIT AND VOLUNTARY SECTOR QUARTERLY	303	HEALTH AND SOCIAL CARE IN THE COMMUNITY
232	AMERICAN JOURNAL OF POLITICAL SCIENCE	264	OPERATIONS RESEARCH	304	INTERNATIONAL JOURNAL OF MANAGEMENT REVIEWS
233	EASTERN EUROPEAN COUNTRYSIDE	265	SOCIAL CHOICE AND WELFARE	305	JAHRBUECHER FÜR NATIONALÖKONOMIE UND STATISTIK
234	ECONOMICS OF EDUCATION REVIEW	266	ADVANCES IN ECONOMETRICS VOL	306	JOURNAL OF ACCOUNTING AND ECONOMICS
235	INTERNATIONAL REVIEW OF APPLIED ECONOMICS	267	AGRICULTURAL ECONOMICS	307	JOURNAL OF BUSINESS
236	JOURNAL OF RISK AND INSURANCE	268	ZEMEDELSKA EKONOMIKA	308	JOURNAL OF COMPUTATIONAL AND GRAPHICAL STATISTICS
237	MACROECONOMICS ANNUAL	269	ENVIRONMENT AND BEHAVIOR	309	JOURNAL OF INTERNATIONAL MANAGEMENT
238	MARKETING SCIENCE	270	GERMAN ECONOMIC REVIEW	310	PUBLIC FINANCE FINANCES PUBLIQUES
239	PSYCHOLOGICAL SCIENCE	271	JOURNAL OF EMPIRICAL FINANCE	311	TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE
240	REVIEW OF INTERNATIONAL ECONOMICS	272	JOURNAL OF FARM ECONOMICS	312	TECHNOLOGY IN SOCIETY
241	WIRTSCHAFT UND GESELLSCHAFT	273	JOURNAL OF HEALTH ECONOMICS	313	TOURISM ECONOMICS
242	WORLD BANK ECONOMIC REVIEW	274	LANCET	314	WORLD BANK RESEARCH OBSERVER
243	ECONOMICS OF TRANSITION	275	ORGANIZATIONAL BEHAVIOR AND HUMAN DECISION PROCESSES	315	ECONOMETRICS JOURNAL
244	EUROPEAN JOURNAL OF POPULATION REVUE EUROPEENNE DE DEMOGRAPHIE	276	PSYCHOLOGICAL REVIEW	316	INTERNATIONAL JOURNAL OF FINANCE AND ECONOMICS
245	INNOVATION THE EUROPEAN JOURNAL OF SOCIAL SCIENCE RESEARCH	277	SUSTAINABLE DEVELOPMENT	317	JOURNAL OF INTERNATIONAL ECONOMIC LAW
246	INTERNATIONAL JOURNAL OF GEOGRAPHICAL INFORMATION SYSTEMS	278	ZEITSCHRIFT FÜR NATIONALÖKONOMIE	318	JOURNAL OF MANAGEMENT AND ORGANIZATION
247	NEURAL NETWORKS	279	JOURNAL OF ECONOMICS	319	JOURNAL OF MANAGEMENT STUDIES
248	ECONOMICA NEW SERIES	280	ANNALS OF MATHEMATICAL STATISTICS	320	JOURNAL OF REAL ESTATE FINANCE AND ECONOMICS
		281	ANNALS OF STATISTICS	321	TECHNOVATION
		282	ANTIPODE	322	UNIVERSITY OF PENNSYLVANIA LAW REVIEW
		283	B E JOURNAL OF MACROECONOMICS	323	AGRICULTURAL MARKETS MECHANISMS FAILURES AND REGULATIONS
		284	CONTEMPORARY ACCOUNTING RESEARCH	324	ANNALS OF THE ASSOCIATION OF AMERICAN GEOGRAPHERS
		285	CONTEMPORARY ECONOMIC POLICY		
		286	DISASTERS		
		287	ECONOMETRIC REVIEWS		
		288	ECONOMIC RECORD		
			EUROPE ASIA STUDIES		
			INTERNATIONAL JOURNAL OF PSYCHOANALYSIS		

*(Continued)*

**Table A4.** Continued.

325	CANADIAN JOURNAL OF AGRICULTURAL ECONOMICS	360	PROGRESS IN PLANNING	395	ACCOUNTING REVIEW
326	ECOLOGICAL MODELLING	361	PUBLIC ADMINISTRATION REVIEW	396	AGEING AND SOCIETY
327	ECOSYSTEMS	362	REVIEW OF AGRICULTURAL ECONOMICS	397	AMERICAN JOURNAL OF ENOLOGY AND VITICULTURE
328	IMF STAFF PAPERS	363	SCIENCE TECHNOLOGY AND HUMAN VALUES	398	ANNALS OF THE AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE
329	INTERNATIONAL JOURNAL OF BIFURCATION AND CHAOS	364	SOCIAL POLITICS	399	AREA
330	JOURNAL OF CONSUMER RESEARCH	365	SOCIOLOGICAL METHODOLOGY	400	AUSTRALIAN JOURNAL OF AGRICULTURAL AND RESOURCE ECONOMICS
331	JOURNAL OF EXPERIMENTAL SOCIAL PSYCHOLOGY	366	SOCIOLOGY THE JOURNAL OF THE BRITISH SOCIOLOGICAL ASSOCIATION	401	BIOSCIENCE
332	JOURNAL OF THE ROYAL STATISTICAL SOCIETY SERIES B STATISTICAL METHODOLOGY	367	AGRIBUSINESS	402	BORDERS REGIONS AND PEOPLE
333	PUBLIC ADMINISTRATION	368	ANNALS OF MATHEMATICS	403	BRITISH JOURNAL OF INDUSTRIAL RELATIONS
334	QUARTERLY JOURNAL OF AUSTRIAN ECONOMICS	369	ANNUAL REVIEW OF PSYCHOLOGY	404	BULLETIN OF THE AMERICAN METEOROLOGICAL SOCIETY
335	STATISTICAL SCIENCE	370	ARGUMENT	405	CALIFORNIA MANAGEMENT REVIEW
336	SYSTEM DYNAMICS REVIEW	371	CANADIAN JOURNAL OF ECONOMICS	406	CHAOS SOLITONS AND FRACTALS
337	WATER SCIENCE AND TECHNOLOGY	372	CAPITALISM SOCIALISM AND RADICAL POLITICAL ECONOMY	407	COMMUNICATIONS IN MATHEMATICAL PHYSICS
338	ACTION PRINCIPLE AND PARTIAL DIFFERENTIAL EQUATIONS	373	COMPETITION POLICY INTERNATIONAL	408	COMMUNICATIONS IN STATISTICS SIMULATION AND COMPUTATION
339	AMERICAN SOCIOLOGICAL REVIEW	374	DESALINATION	409	CONSERVATION ECOLOGY
340	ANNALS OF TOURISM RESEARCH	375	ENVIRONMENT AND URBANIZATION	410	DEMOGRAPHIC RESEARCH
341	ANTITRUST LAW JOURNAL	376	EVOLUTIONARY THEORY	411	DEVELOPMENT AND CHANGE
342	COMMUNICATION	377	GROUP DECISION AND NEGOTIATION	412	ECONOMIST NETHERLANDS
343	FISCAL STUDIES	378	INTERNATIONAL JOURNAL OF ENVIRONMENT AND POLLUTION	413	EDUCATIONAL RECORD
344	HEALTH ECONOMICS	379	INTERNATIONAL JOURNAL OF SOCIAL ECONOMICS	414	FEMINIST ECONOMICS
345	HUMAN RELATIONS	380	INTERNATIONAL JOURNAL OF SUSTAINABLE DEVELOPMENT AND WORLD ECOLOGY	415	FOREST BIODIVERSITY LESSONS FROM HISTORY FOR CONSERVATION
346	INCENTIVES REGULATIONS AND PLANS THE ROLE OF STATES AND NATION STATES IN SMART GROWTH PLANNING	381	MATHEMATICAL SOCIAL SCIENCES	416	GEOPHYSICAL RESEARCH LETTERS
347	INTERNATIONAL JOURNAL OF TECHNOLOGY MANAGEMENT	382	ORGANIZATIONAL DYNAMICS	417	HOUSING STUDIES
348	INTERNATIONAL REVIEW OF ECONOMICS AND FINANCE	383	PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY A MATHEMATICAL PHYSICAL AND ENGINEERING SCIENCES	418	HUMAN STUDIES
349	INTERNATIONAL SOCIAL SCIENCE JOURNAL	384	POLICY SCIENCES	419	HYDROLOGY AND EARTH SYSTEM SCIENCES
350	INTERNATIONAL STATISTICAL REVIEW	385	POST COMMUNIST ECONOMIES	420	IEEE TRANSACTIONS ON AUTOMATIC CONTROL
351	JAPAN AND THE WORLD ECONOMY	386	PSYCHOLOGICAL BULLETIN	421	INTERNATIONAL JOURNAL OF MANPOWER
352	JASSS THE JOURNAL OF ARTIFICIAL SOCIETIES AND SOCIAL SIMULATION	387	RESEARCH IN ORGANIZATIONAL BEHAVIOR	422	JOURNAL OF AGRICULTURAL AND RESOURCE ECONOMICS
353	JCMS JOURNAL OF COMMON MARKET STUDIES	388	REVIEW OF INTERNATIONAL POLITICAL ECONOMY	423	JOURNAL OF CONFLICT RESOLUTION
354	JOURNAL OF BEHAVIORAL DECISION MAKING	389	SOCIAL NETWORKS	424	JOURNAL OF DEMOCRACY
355	JOURNAL OF MANAGEMENT	390	STATISTICS AND PROBABILITY LETTERS	425	JOURNAL OF ECONOMIC INEQUALITY
356	LAW AND CONTEMPORARY PROBLEMS	391	TECHNOLOGY ANALYSIS AND STRATEGIC MANAGEMENT	426	JOURNAL OF ENGINEERING AND TECHNOLOGY MANAGEMENT
357	MATHEMATICAL BIOSCIENCES	392	THEORETICAL POPULATION BIOLOGY	427	JOURNAL OF EUROPEAN PUBLIC POLICY
358	PAPERS OF THE REGIONAL SCIENCE ASSOCIATION	393	TRANSPORT REVIEWS	428	JOURNAL OF GAMBLING STUDIES
359	PROCEEDINGS OF THE ROYAL SOCIETY B BIOLOGICAL SCIENCES	394	WATER RESOURCES MANAGEMENT	429	JOURNAL OF HYDROMETEOROLOGY
				430	JOURNAL OF MATHEMATICAL PSYCHOLOGY

*(Continued)*

**Table A4.** Continued.

431	JOURNAL OF PEACE RESEARCH	467	CHALLENGES TO ASIAN	500	JOURNAL OF THE AMERICAN
432	JOURNAL OF RESEARCH OF THE		URBANIZATION IN THE ST		SOCIETY FOR INFORMATION
	NATIONAL BUREAU OF		CENTURY		SCIENCE
	STANDARDS	468	CITIES	501	JOURNAL OF THE
433	JOURNAL OF WORLD TRADE	469	COLUMBIA LAW REVIEW		OPERATIONAL RESEARCH
434	MINERVA	470	COMPUTER JOURNAL		SOCIETY
435	NEW ENGLAND ECONOMIC	471	DIAGNOSTICA	502	JOURNAL OF THEORETICAL
	REVIEW	472	DIALOGUE CANADIAN		POLITICS
436	NEW ENGLAND JOURNAL OF		PHILOSOPHICAL REVIEW	503	NATURAL RESOURCES
	MEDICINE	473	ECONOMIC DEVELOPMENT		JOURNAL
437	NEW LEFT REVIEW		QUARTERLY	504	PHYSICA D
438	OMEGA INTERNATIONAL	474	ENERGY	505	PHYSICAL REVIEW E
	JOURNAL OF MANAGEMENT	475	ENVIRONMENT AND	506	RENEWABLE AND
	SCIENCE		DEVELOPMENT ECONOMICS		SUSTAINABLE ENERGY
439	ORGANIZATION	476	ENVIRONMENTAL MODELING		REVIEWS
440	ORGANIZATION SCIENCE		AND ASSESSMENT	507	RESEARCH TECHNOLOGY
441	PARASITOLOGY TODAY	477	EUROPEAN JOURNAL OF		MANAGEMENT
442	PERSONALITY AND SOCIAL		PUBLIC HEALTH	508	REVIEW OF ECONOMIC
	PSYCHOLOGY BULLETIN	478	EUROPEAN JOURNAL OF WORK		STATISTICS
443	PHYSICA A		AND ORGANIZATIONAL	509	REVIEW OF INCOME AND
444	PSYCHE ZEITSCHRIFT FUR		PSYCHOLOGY		WEALTH
	PSYCHOANALYSE UND IHRE	479	GEOFORUM	510	REVIEW OF RADICAL POLITICAL
	ANWENDUNGEN	480	HEALTH POLICY		ECONOMICS
445	PSYCHOLOGY PUBLIC POLICY	481	HISTORY OF ECONOMICS	511	SCANDINAVIAN JOURNAL OF
	AND LAW		REVIEW		MANAGEMENT
446	RATIONALITY AND SOCIETY	482	IEEE TRANSACTIONS ON	512	SCIENTOMETRICS
447	SOCIETY AND NATURAL		NEURAL NETWORKS	513	SIAM JOURNAL ON CONTROL
	RESOURCES	483	IEEE TRANSACTIONS ON		AND OPTIMIZATION
448	SOIL DYNAMICS AND		SYSTEMS MAN AND	514	SOCIAL COGNITION
	EARTHQUAKE ENGINEERING		CYBERNETICS	515	SOCIAL INDICATORS RESEARCH
449	STATA JOURNAL	484	INQUIRY AN	516	SOCIAL SCIENCE INFORMATION
450	STRUCTURAL DESIGN OF TALL		INTERDISCIPLINARY JOURNAL	517	SOCIAL SCIENCE JOURNAL
	AND SPECIAL BUILDINGS		OF PHILOSOPHY	518	SYNTHESE
451	SWEDISH JOURNAL OF	485	INSTITUTIONS POLITICS AND	519	THIRD WORLD QUARTERLY
	ECONOMICS		FISCAL POLICY	520	TRANSPORTATION RESEARCH
452	TRANSACTIONS OF THE	486	INTERNATIONAL JOURNAL OF	521	UNIVERSITY OF CHICAGO LAW
	AMERICAN MATHEMATICAL		PSYCHO ANALYSIS		REVIEW
	SOCIETY	487	INTERNATIONAL	522	URBAN GEOGRAPHY
453	TRANSPORTATION		ORGANIZATION	523	VIRGINIA LAW REVIEW
454	TRANSPORTATION RESEARCH	488	INZINERINE EKONOMIKA	524	WESTERN ECONOMIC JOURNAL
	PART E LOGISTICS AND		ENGINEERING ECONOMICS	525	ZEITSCHRIFT FUR
	TRANSPORTATION REVIEW	489	JOURNAL OF APPLIED		BETRIEBSWIRTSCHAFT
455	UCLA LAW REVIEW		PROBABILITY	526	ABDOMINAL AORTIC
456	WATER AIR AND SOIL	490	JOURNAL OF CROSS CULTURAL		ANEURYSM GENETICS
	POLLUTION		PSYCHOLOGY		PATHOPHYSIOLOGY AND
457	WORLD POLITICS	491	JOURNAL OF ECONOMIC		MOLECULAR BIOLOGY
458	ADANCES IN EXPERIMENTAL		STUDIES	527	ACADEMY OF MANAGEMENT
	SOCIAL PSYCHOLOGY VOL	492	JOURNAL OF ENVIRONMENTAL		LEARNING AND EDUCATION
459	ADVANCES IN THE ECONOMICS		EDUCATION	528	ACADEMY OF MANAGEMENT
	OF AGING	493	JOURNAL OF ENVIRONMENTAL		PERSPECTIVES
460	AGRICULTURE ECOSYSTEMS		PLANNING AND	529	ADVANCES IN CONSUMER
	AND ENVIRONMENT		MANAGEMENT		RESEARCH
461	AMBIO	494	JOURNAL OF MARKETING	530	ADVANCES IN SPATIAL SCIENCE
462	APPLIED ENERGY	495	JOURNAL OF MATHEMATICAL	531	AGRICULTURAL ECONOMICS
463	APPLIED PSYCHOLOGY		BIOLOGY	532	AMERICAN ANTHROPOLOGIST
	AN INTERNATIONAL	496	JOURNAL OF MATHEMATICAL	533	AMERICAN PSYCHOLOGIST
	REVIEW PSYCHOLOGIE		SOCIOLOGY	534	ANNALS OF THE RHEUMATIC
	APPLIQUEE REVUE	497	JOURNAL OF POLICY ANALYSIS		DISEASES
	INTERNATIONALE		AND MANAGEMENT	535	ANNUAL REVIEW OF
464	AUSTRALIAN JOURNAL OF	498	JOURNAL OF SOCIO		ENVIRONMENT AND
	AGRICULTURAL ECONOMICS		ECONOMICS		RESOURCES
465	BIOLOGICAL CYBERNETICS	499	JOURNAL OF THE AMERICAN	536	APPLIED OPTICS
466	BUSINESS ETHICS QUARTERLY		PLANNING ASSOCIATION	537	AQUATIC SCIENCES

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**Table A4.** Continued.

538	AUSTRALIAN ECONOMIC PAPERS	572	INTERNATIONAL SMALL BUSINESS JOURNAL	604	POLICY STUDIES JOURNAL
539	BEHAVIORAL AND BRAIN SCIENCES	573	JAPAN ECONOMIC REVIEW	605	POPULATION AND DEVELOPMENT REVIEW
540	BIOMETRICS	574	JOURNAL OF ADVERTISING RESEARCH	606	PSYCHOMETRIKA
541	BRITISH JOURNAL OF MANAGEMENT	575	JOURNAL OF APPLIED ECONOMICS	607	PUBLIC POLICY
542	BRITISH JOURNAL OF POLITICAL SCIENCE	576	JOURNAL OF BUSINESS RESEARCH	608	RESOURCE AND ENERGY ECONOMICS
543	BULLETIN OF THE AMERICAN MATHEMATICAL SOCIETY	577	JOURNAL OF DEVELOPMENT STUDIES	609	RESOURCES AND ENERGY REVIEW OF DEVELOPMENT ECONOMICS
544	CARNEGIE ROCHESTER CONFERENCE SERIES ON PUBLIC POLICY A BI ANNUAL CONFERENCE PROCEEDINGS VOL JULY	578	JOURNAL OF ECONOMIC AND SOCIAL MEASUREMENT	611	REVIEW OF FINANCE
545	COMMON MARKET LAW REVIEW	579	JOURNAL OF ECONOMIC EDUCATION	612	REVIEW OF SOCIAL ECONOMY
546	COMPARATIVE POLITICAL STUDIES	580	JOURNAL OF ECONOMIC HISTORY	613	RHEUMATOLOGY INTERNATIONAL
547	COMPUTATIONAL STATISTICS AND DATA ANALYSIS	581	JOURNAL OF EXPERIMENTAL PSYCHOLOGY	614	SCIENCE OF THE TOTAL ENVIRONMENT
548	CONSERVATION BIOLOGY	582	JOURNAL OF POLICY REFORM	615	SIAM REVIEW
549	CONTEMPORARY POLICY ISSUES	583	JOURNAL OF POLITICS	616	SLOAN MANAGEMENT REVIEW
550	DEVELOPMENT	584	JOURNAL OF PUBLIC ECONOMIC THEORY	617	SOCIAL BEHAVIOUR
551	EASTERN EUROPEAN ECONOMICS	585	JOURNAL OF RETAILING	618	SOCIO ECONOMIC PLANNING SCIENCES
552	ECOLOGICAL ENGINEERING	586	JOURNAL OF RURAL STUDIES	619	SOCIOBIOLOGY
553	ECOLOGY	587	JOURNAL OF THE AMERICAN INSTITUTE OF PLANNERS	620	SOCIOLOGIA RURALIS
554	ECONOMIC DEVELOPMENT AND CULTURAL CHANGE	588	JOURNALS OF GERONTOLOGY SERIES B PSYCHOLOGICAL SCIENCES AND SOCIAL SCIENCES	621	STATISTICA SINICA
555	ELECTRIC POWER SYSTEMS RESEARCH	589	LANDSCAPE AND URBAN PLANNING	622	STATISTICS AND COMPUTING
556	ENVIRONMENT AND PLANNING	590	MANCHESTER SCHOOL OF ECONOMIC AND SOCIAL STUDIES	623	STUDIES IN NONLINEAR DYNAMICS AND ECONOMETRICS
557	ENVIRONMENTAL IMPACT ASSESSMENT REVIEW	591	MATHEMATICS OF COMPUTATION	624	SYSTEMS RESEARCH AND BEHAVIORAL SCIENCE
558	ENVIRONMENTAL MONITORING AND ASSESSMENT	592	MEDICAL CARE	625	TAXON
559	EUROPEAN FINANCIAL MANAGEMENT	593	MILBANK MEMORIAL FUND QUARTERLY HEALTH AND SOCIETY	626	TECHNOMETRICS
560	EVOLUTION	594	MONTHLY LABOR REVIEW	627	THEORETICAL AND APPLIED CLIMATOLOGY
561	FOREIGN AFFAIRS	595	MONTHLY REVIEW AN INDEPENDENT SOCIALIST MAGAZINE	628	TRANSPORTATION RESEARCH PART C EMERGING TECHNOLOGIES
562	GLOBAL ENVIRONMENTAL POLITICS	596	NAVAL RESEARCH LOGISTICS	629	TRB DISTINGUISHED LECTURE PT MAINTENANCE CHALLENGES AND SAFETY ISSUES PT
563	HEALTH AFFAIRS	597	NORTH AMERICAN ECONOMIC AND FINANCIAL INTEGRATION	630	WATER POLICY
564	HISTORY AND THEORY	598	OPTIMAL CONTROL APPLICATIONS AND METHODS	631	WATER RESEARCH
565	IEEE TRANSACTIONS ON ACOUSTICS SPEECH AND SIGNAL PROCESSING	599	OR SPEKTRUM	632	AAPS PHARMSCI
566	INTERNATIONAL ENVIRONMENTAL AGREEMENTS POLITICS LAW AND ECONOMICS	600	PERCEPTION AND PSYCHOPHYSICS	633	ACCOUNTING AND FINANCE
567	INTERNATIONAL JOURNAL OF CONFLICT MANAGEMENT	601	PERSONALITY AND SOCIAL PSYCHOLOGY REVIEW	634	ACTA PSYCHOLOGICA
568	INTERNATIONAL JOURNAL OF ENVIRONMENTAL STUDIES	602	PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY B BIOLOGICAL SCIENCES	635	ADVANCES IN APPLIED MATHEMATICS
569	INTERNATIONAL JOURNAL OF GEOGRAPHICAL INFORMATION SCIENCE	603	PHILOSOPHY AND PUBLIC AFFAIRS	636	ADVANCES IN APPLIED PROBABILITY
570	INTERNATIONAL JOURNAL OF HOSPITALITY MANAGEMENT			637	ADVANCES IN DECISION ANALYSIS
571	INTERNATIONAL MIGRATION			638	ADVANCES IN ECOLOGICAL SCIENCES
				639	ADVANCES IN OCCUPATIONAL ERGONOMICS AND SAFETY
				640	ADVANCES IN OPTIMIZATION
				641	AGE
				642	AGRICULTURAL ECONOMICS RESEARCH
				643	AGRICULTURAL RESEARCH
				644	AGRICULTURAL SYSTEMS
				645	ALTERNATIVES
				646	AMERICAN ECONOMIST

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**Table A4.** Continued.

647	AMERICAN JOURNAL OF PSYCHOLOGY	687	CANADIAN JOURNAL OF MATHEMATICS JOURNAL	721	ENVIRONMENTAL CONSERVATION
648	AMERICAN NATURALIST		CANADIEN DE	722	ENVIRONMENTAL TOXICOLOGY AND CHEMISTRY
649	AMERICAN ZOOLOGIST		MATHEMATIQUES	723	ERDKUNDE
650	ANNALS OF APPLIED PROBABILITY	688	CANADIAN JOURNAL OF STATISTICS REVUE	724	EUROPEAN JOURNAL OF GASTROENTEROLOGY AND HEPATOLOGY
651	ANNALS OF ECONOMICS AND FINANCE		CANADIENNE DE STATISTIQUE	725	EUROPEAN JOURNAL OF INTERNATIONAL MANAGEMENT
652	ANNALS OF OPERATIONS RESEARCH	689	CANCER GENETICS AND CYTOGENETICS	726	EUROPEAN JOURNAL OF PHILOSOPHY
653	ANNALS OF PROBABILITY	690	CLEAN TECHNOLOGIES AND ENVIRONMENTAL POLICY	727	EUROPEAN JOURNAL OF POLITICAL RESEARCH
654	ANNUAL REVIEW OF ECOLOGY AND SYSTEMATICS	691	COGNITIVE PSYCHOLOGY	728	EUROPEAN JOURNAL OF SOCIAL PSYCHOLOGY
655	ANNUAL REVIEW OF LAW AND SOCIAL SCIENCE	692	COMMUNICATIONS IN STATISTICS PART A THEORY AND METHODS	729	EUROPEAN JOURNAL OF SOIL SCIENCE
656	ANNUAL REVIEW OF POLITICAL SCIENCE	693	COMPARATIVE POLITICS	730	EUROPEAN REVIEW OF SOCIAL PSYCHOLOGY
657	ANNUAL REVIEW OF SOCIOLOGY	694	COMPEL THE INTERNATIONAL JOURNAL FOR COMPUTATION AND MATHEMATICS IN ELECTRICAL AND ELECTRONIC ENGINEERING	731	EUROPEAN SOCIOLOGICAL REVIEW
658	ANNUAL WORK BANK CONFERENCE ON DEVELOPMENT ECONOMICS	695	COMPUTER GRAPHICS AND IMAGE PROCESSING	732	EVALUATION AND PROGRAM PLANNING
659	APPLIED COGNITIVE PSYCHOLOGY	696	COMPUTERS AND INDUSTRIAL ENGINEERING	733	EVALUATION REVIEW
660	APPLIED ERGONOMICS	697	COMPUTERS AND MATHEMATICS WITH APPLICATIONS	734	EVOLUTION AND HUMAN BEHAVIOR
661	APPLIED MATHEMATICAL MODELLING	698	COMPUTERS AND OPERATIONS RESEARCH	735	EXPERT REVIEW OF VACCINES
662	APPLIED MATHEMATICS AND OPTIMIZATION	699	COMPUTING AND INFORMATICS	736	EXPERT SYSTEMS WITH APPLICATIONS
663	APPLIED STATISTICAL SCIENCE	700	CONSCIOUSNESS AND COGNITION	737	EXPLORATIONS IN ECONOMIC HISTORY
664	ARCHIVES EUROPEENNES DE SOCIOLOGIE	701	CONTRIBUTIONS TO POLITICAL ECONOMY	738	EXPLORING POSITIVE RELATIONSHIPS AT WORK BUILDING A THEORETICAL AND RESEARCH FOUNDATION
665	ARE THE DISTINCTIONS BETWEEN DEBT AND EQUITY DISAPPEARING	702	CROSS CULTURAL RESEARCH	739	FAMILY BUSINESS REVIEW
666	ARTIFICIAL LIFE	703	CURRENT SOCIOLOGY	740	FISHERIES RESEARCH
667	ATTENTION PERCEPTION AND PSYCHOPHYSICS	704	DEVELOPING ECONOMIES	741	FOOD POLICY
668	AUSTRALIAN GEOGRAPHER	705	DEVELOPMENT POLICY REVIEW	742	FORESTRY
669	AUSTRALIAN JOURNAL OF ZOOLOGY	706	DISCRETE AND CONTINUOUS DYNAMICAL SYSTEMS SERIES B	743	FRONTIERS IN ECOLOGY AND THE ENVIRONMENT
670	BEHAVIOR ANALYST	707	DOKLADY MATHEMATICS	744	FUZZY SETS AND SYSTEMS
671	BEHAVIOR RESEARCH METHODS INSTRUMENTS AND COMPUTERS	708	EARTH SCIENCE REVIEWS	745	GENDER WORK AND ORGANIZATION
672	BEHAVIORAL SCIENCE	709	EAST EUROPEAN QUARTERLY	746	GENEVA PAPERS ON RISK AND INSURANCE ISSUES AND PRACTICE
673	BERICHTE UBER LANDWIRTSCHAFT	710	ECONOMIC AND POLITICAL WEEKLY	747	GENEVA PAPERS ON RISK AND INSURANCE THEORY
674	BEYOND WORDS	711	ECONOMIC AND SOCIAL REVIEW	748	GEOGRAFISKA ANNALER SERIES B HUMAN GEOGRAPHY
675	BIOLOGICAL CONSERVATION	712	ECONOMICS OF NEW GOODS	749	GEOGRAPHICAL JOURNAL
676	BIOLOGY LETTERS	713	ECONOMICS OF PLANNING	750	GEOGRAPHISCHE ZEITSCHRIFT
677	BIOMETRICAL JOURNAL	714	ECONOMIE APPLIQUEE	751	GLOBAL BIOGEOCHEMICAL CYCLES
678	BODENKULTUR	715	ECONOMY AND SOCIETY	752	GLOBAL ECOLOGY AND BIOGEOGRAPHY
679	BRITISH JOURNAL OF SOCIAL PSYCHOLOGY	716	EDUCATIONAL PSYCHOLOGIST	753	GOVERNMENT AND OPPOSITION
680	BRITISH MEDICAL JOURNAL	717	EKONOMICKO MATEMATICKY OBZOR	754	HARVARD LAW REVIEW
681	BRITISH TAX REVIEW	718	ELECTRONIC PRODUCT DESIGN	755	HEALTH AND THE NEW MEDIA
682	BULLETIN OF THE AUSTRALIAN MATHEMATICAL SOCIETY	719	ENERGY CONVERSION AND MANAGEMENT		
683	BUSINESS CYCLES INDICATORS AND FORECASTING	720	ENVIRONMENT AND PLANNING B PLANNING AND DESIGN		
684	BUSINESS HISTORY REVIEW				
685	BUSINESS LAWYER				
686	CALIFORNIA LAW REVIEW				

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**Table A4.** Continued.

756	HEALTH PHYSICS	793	JAPCA THE JOURNAL OF THE AIR AND WASTE MANAGEMENT ASSOCIATION	825	JOURNAL OF PUBLIC POLICY AND MARKETING
757	HEALTH SERVICES RESEARCH			826	JOURNAL OF RESEARCH IN READING
758	HISTORY OF EUROPEAN IDEAS			827	JOURNAL OF RHEUMATOLOGY
759	HORIZON	794	JOURNAL FOR NATURE CONSERVATION	828	JOURNAL OF SERVICES MARKETING
760	HOSPITAL AND HEALTH SERVICES ADMINISTRATION	795	JOURNAL OF AFRICAN ECONOMIES	829	JOURNAL OF SOCIOLOGY
761	HUMAN ECOLOGY	796	JOURNAL OF ANIMAL ECOLOGY	830	JOURNAL OF SPORTS ECONOMICS
762	HYDROLOGICAL PROCESSES	797	JOURNAL OF APPLIED ECOLOGY	831	JOURNAL OF STATISTICAL COMPUTATION AND SIMULATION
763	ICARUS	798	JOURNAL OF BAND RESEARCH	832	JOURNAL OF STATISTICAL PLANNING AND INFERENCE
764	IEEE INTELLIGENT SYSTEMS	799	JOURNAL OF BIOGEOGRAPHY	833	JOURNAL OF STRATEGIC INFORMATION SYSTEMS
765	IEEE PERVASIVE COMPUTING	800	JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY	834	JOURNAL OF THE AIR AND WASTE MANAGEMENT ASSOCIATION
766	IEEE TRANSACTIONS ON ELECTRONIC COMPUTERS			835	JOURNAL OF THE AMERICAN PSYCHOANALYTIC ASSOCIATION
767	IEEE TRANSACTIONS ON POWER SYSTEMS	801	JOURNAL OF CLEANER PRODUCTION	836	JOURNAL OF THE AMERICAN WATER RESOURCES ASSOCIATION
768	IMMUNOLOGY	802	JOURNAL OF COMMUNITY AND APPLIED SOCIAL PSYCHOLOGY	837	JOURNAL OF THE CHARTERED INSTITUTION OF WATER AND ENVIRONMENTAL MANAGEMENT
769	INFOR	803	JOURNAL OF CONSUMER AFFAIRS	838	JOURNAL OF THE EXPERIMENTAL ANALYSIS OF BEHAVIOR
770	INFORMATION AND COMPUTATION	804	JOURNAL OF CONSUMER MARKETING	839	JOURNAL OF THE ROYAL STATISTICAL SOCIETY SERIES A GENERAL
771	INFORMATION SCIENCES	805	JOURNAL OF CONSUMER POLICY	840	JOURNAL OF VOCATIONAL BEHAVIOR
772	INQUIRY THE JOURNAL OF HEALTH CARE ORGANIZATION PROVISION AND FINANCING	806	JOURNAL OF CONTEMPORARY ASIA	841	JOURNAL OF WOMENS HEALTH
773	INTERDISCIPLINARY SCIENCE REVIEWS	807	JOURNAL OF COUNSELING PSYCHOLOGY	842	JOURNAL WATER POLLUTION CONTROL FEDERATION
774	INTERNATIONAL DEVELOPMENT REVIEW	808	JOURNAL OF EDUCATIONAL AND BEHAVIORAL STATISTICS	843	JUDGMENT AND DECISION MAKING
775	INTERNATIONAL JOURNAL OF EPIDEMIOLOGY	809	JOURNAL OF EDUCATIONAL PSYCHOLOGY	844	KNOWLEDGE CREATION DIFFUSION UTILIZATION
776	INTERNATIONAL JOURNAL OF GREEN ECONOMICS	810	JOURNAL OF EDUCATIONAL RESEARCH	845	KOLNER ZEITSCHRIFT FUR SOZIOLOGIE UND SOZIALPSYCHOLOGIE
777	INTERNATIONAL JOURNAL OF GREENHOUSE GAS CONTROL	811	JOURNAL OF ENVIRONMENTAL QUALITY	846	LANDSCAPE ECOLOGY
778	INTERNATIONAL JOURNAL OF HEALTH CARE FINANCE AND ECONOMICS	812	JOURNAL OF EXPERIMENTAL PSYCHOLOGY APPLIED	847	LAW AND POLICY
779	INTERNATIONAL JOURNAL OF INTELLIGENT SYSTEMS	813	JOURNAL OF FINANCIAL INTERMEDIATION	848	LAW AND SOCIETY REVIEW
780	INTERNATIONAL JOURNAL OF LIFE CYCLE ASSESSMENT	814	JOURNAL OF FINANCIAL SERVICES RESEARCH	849	LEADERSHIP QUARTERLY
781	INTERNATIONAL JOURNAL OF POLITICAL ECONOMY	815	JOURNAL OF FOOD PROCESSING AND PRESERVATION	850	LOGISTICS AND TRANSPORTATION REVIEW
782	INTERNATIONAL JOURNAL OF SOCIAL WELFARE	816	JOURNAL OF GLOBAL OPTIMIZATION	851	MACHINE LEARNING
783	INTERNATIONAL JOURNAL OF SYSTEMS SCIENCE	817	JOURNAL OF HAZARDOUS MATERIALS	852	MANAGEMENT INTERNATIONAL REVIEW
784	INTERNATIONAL LABOUR REVIEW	818	JOURNAL OF HIGHER EDUCATION	853	MANAGEMENT SCIENCE SERIES B APPLICATION
785	INTERNATIONAL LAWYER	819	JOURNAL OF MANAGEMENT INFORMATION SYSTEMS	854	MANAGERIAL AND DECISION ECONOMICS
786	INTERNATIONAL MIGRATION REVIEW	820	JOURNAL OF MEDIA ECONOMICS	855	MANAGERIAL FINANCE
787	INTERNATIONAL POLITICAL SCIENCE REVIEW	821	JOURNAL OF MEDICAL SYSTEMS	856	MARKETING LETTERS
788	INTERNATIONAL REVIEW OF ADMINISTRATIVE SCIENCES	822	JOURNAL OF NONPARAMETRIC STATISTICS	857	MATHEMATICAL FINANCE
789	INTERNATIONAL REVIEW OF PSYCHO ANALYSIS	823	JOURNAL OF OCCUPATIONAL BEHAVIOUR		
790	INTERNATIONAL STUDIES QUARTERLY	824	JOURNAL OF PHILOSOPHY		
791	INVENTIONES MATHEMATICAE				
792	INVEST ECON SPAIN				

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**Table A4.** Continued.

858	MATHEMATICAL POPULATION STUDIES	892	PSYCHOLOGICAL MONOGRAPHS	928	STATISTICA NEERLANDICA
859	MATHEMATICAL PROGRAMMING STUDY	893	PSYCHOLOGICAL STUDIES	929	STATISTICIAN
860	MATHEMATICAL SYSTEMS THEORY	894	PSYCHOLOGY AND AGING	930	STUDIES IN COMPARATIVE INTERNATIONAL DEVELOPMENT
861	MATHEMATICS AND COMPUTERS IN SIMULATION	895	PSYCHONOMIC BULLETIN AND REVIEW	931	STUDIES IN HISTORY AND PHILOSOPHY OF SCIENCE
862	MATHEMATISCHE ANNALEN	896	PUBLIC OPINION QUARTERLY	932	SYSTEMATIC ZOOLOGY
863	MEDICAL CARE RESEARCH AND REVIEW	897	PUBLIC RELATIONS REVIEW	933	SYSTEMIC PRACTICE AND ACTION RESEARCH
864	MEDICAL SCIENCE MONITOR	898	PUBLIUS THE JOURNAL OF FEDERALISM	934	TAX POLICY AND THE ECONOMY
865	MEMORY AND COGNITION	899	QUARTERLY JOURNAL OF POLITICAL SCIENCE	935	TECHNOLOGY AND CULTURE
866	MINNESOTA LAW REVIEW	900	QUARTERLY JOURNAL OF THE ROYAL METEOROLOGICAL SOCIETY	936	TECHNOLOGY REVIEW
867	MIT SLOAN MANAGEMENT REVIEW	901	QUARTERLY REVIEW OF BIOLOGY	937	TELLUS
868	MONATSHEFTE FÜR MATHEMATIK	902	QUARTERLY REVIEW OF ECONOMICS AND FINANCE	938	THE SAINT FLOUR SUMMER SCHOOL ON PROBABILITIES
869	NETWORKS AND SPATIAL ECONOMICS	903	REGIONAL ENVIRONMENTAL CHANGE	939	THE ROYAL STATISTICAL SOCIETY SERIES C APPLIED STATISTICS
870	NEURODEGENERATION	904	RENEWABLE ENERGY	940	THEORY AND SOCIETY
871	NEUROQUANTOLOGY	905	RESEARCH IN THE HISTORY OF ECONOMIC THOUGHT AND METHODOLOGY A RESEARCH ANNUAL	941	THEORY OF PROBABILITY AND ITS APPLICATIONS
872	NONLINEAR ANALYSIS THEORY METHODS AND APPLICATIONS	906	RESEARCH MANAGEMENT	942	TJDSCHRIFT VOOR ECONOMISCH EN SOCIALE GEOGRAFIE
873	NONLINEARITY	907	RESEARCH ON AGING	943	TOP
874	NORTHWESTERN UNIVERSITY LAW REVIEW	908	REVIEW OF HIGHER EDUCATION	944	TOWN PLANNING REVIEW
875	OPERATIONAL RESEARCH QUARTERLY	909	REVIEW OF PUBLIC DATA USE	945	TRANSPORTATION RESEARCH PART D TRANSPORT AND ENVIRONMENT
876	ORGANIZATION AND ENVIRONMENT	910	REVIEW OF RESEARCH IN EDUCATION	946	TRENDS IN COGNITIVE SCIENCES
877	PACIFIC ECONOMIC REVIEW	911	REVUE D ETUDES COMPARATIVES EST OUEST	947	URBAN AFFAIRS REVIEW
878	PAST AND PRESENT	912	REVUE FRANCAISE DE SOCIOLOGIE	948	VERHALTENSTHERAPIE
879	PERSONALITY AND INDIVIDUAL DIFFERENCES	913	RURAL SOCIOLOGY	949	WATER RESOURCES RESEARCH
880	PERSONNEL PSYCHOLOGY	914	RUSSELL SAGE FOUNDATION SERIES ON TRUST	950	WEST EUROPEAN POLITICS
881	PFLEGE	915	RUTGERS LAW REVIEW	951	WIRTSCHAFTSINFORMATIK
882	PHILOSOPHICAL STUDIES	916	SCANDINAVIAN JOURNAL OF STATISTICS	952	YEARS OF MODEL CHECKING HISTORY ACHIEVEMENTS PERSPECTIVES
883	PHILOSOPHY OF SCIENCE	917	SCIENCE AND EDUCATION	953	ZEITSCHRIFT FÜR EXPERIMENTELLE UND ANGEWANDTE PSYCHOLOGIE
884	PLOS COMPUTATIONAL BIOLOGY	918	SIGNS	954	ZEITSCHRIFT FÜR PERSONALFORSCHUNG
885	POLITICAL ANALYSIS	919	SOCIAL BEHAVIOR AND PERSONALITY	955	ZEITSCHRIFT FÜR PSYCHOLOGIE
886	POLITICAL RESEARCH QUARTERLY	920	SOCIAL FORCES	956	ZEITSCHRIFT FÜR SOZIOLOGIE
887	PORTAL LIBRARIES AND THE ACADEMY	921	SOCIAL PSYCHOLOGY	957	ZEITSCHRIFT FÜR WAHRSCHEINLICHKEIT STHEORIE UND VERWANDTE GEBIETE
888	POST SOVIET AFFAIRS	922	SOCIAL PSYCHOLOGY QUARTERLY	958	ZYGON
889	PROBABILITY THEORY AND RELATED FIELDS	923	SOCIAL SCIENCE QUARTERLY		
890	PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA BIOLOGICAL SCIENCES	924	SOCIAL STUDIES OF SCIENCE		
891	PROGRESS IN PHYSICAL GEOGRAPHY	925	SOCIOLOGICAL METHODS AND RESEARCH		
		926	SOCIOLOGICAL QUARTERLY		
		927	STANFORD LAW REVIEW		