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**Heterodox Economics and Dissemination of Research through
the Internet: the Experience of RePEc and NEP**

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Abstract

We study how the democratization of the diffusion of research through the Internet could have helped non traditional fields of research. The specific case we approach is Heterodox Economics as its pre-prints are disseminated through NEP, the email alert service of RePEc. Comparing heterodox and mainstream papers, we find that heterodox ones are quite systematically more downloaded, and particularly so when considering downloads per subscriber. We conclude that the Internet definitely helps heterodox research, also because other researcher get exposed to it. But there is still room for more participation by heterodox researchers.

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Introduction

The development of the web is changing the way in which research is disseminated and found. Providing a paper online makes it more likely to be read and quoted (Bergstrom & Lavaty, 2007), which has prompted most publishers to allow scholars to keep their work on the web even after publication. Changes could be even deeper. Ellison (2007) proposes the hypothesis that "the Internet improves the ability of high-profile authors to disseminate their research without going through the traditional peer-review process," thus reducing the proportion of papers in top Economics journals written by economists from the highest-ranked institutions.

The present paper aims at showing how RePEc and NEP can help in disseminating research in Economics, and especially in Heterodox Economics, thus contributing to a more democratic development of the discipline as a whole. Publishing and spreading information on heterodox articles is probably more difficult in many respects than mainstream works. First, there are fewer appropriate journals. Second, it is also likely that referees push authors towards less heterodox interpretations (Frey 2002). While some articles can be published in lesser known journals, this limits their diffusion. As a consequence, it becomes more difficult to find heterodox papers. Lesser known journals, as well as journals in marginal and interdisciplinary areas close to Economics, like Political Science, Sociology, Psychology are less available in small libraries, especially in libraries attached to faculties, like they are common in Europe.

We show how RePEc and NEP create equal conditions for heterodox works, and how this probably respond to a need of scholars interested in heterodox works.

RePEc

RePEc (Research Papers in Economics) is an informal organization of economists who strive to increase the dissemination of research using the Internet. Formed in 1997 as the successor to an initiative started in 1993, it defines a set of rules governing the data on bibliographic records of different types of documents: journal articles, working papers, books, chapters and software components.

Lacking funding, RePEc sought to find an economical way to operate. It was found that the decentralization of data collection would be optimal: once critical mass is obtained, it is in the best interest for publishers to be listed on RePEc, thus they should bear the cost of indexing their publications. On this principle, close to 900 publishers have joined RePEc at the time of this writing.

One particular aspect of RePEc is that anybody is welcome to join, as long there is a connection to Economics. There is no discrimination by field, ideology, geographic location or language. There is no attempt at refereeing or quality control. This has allowed publishers in developing countries to find an inexpensive (in fact, free) and popular outlet for their works. The same applies to works in non-traditional areas of Economics, in particular Heterodox Economics.

Interestingly, all major publishers are quite keen on participating in RePEc as well, as it is now viewed as an essential part of a dissemination strategy for anything published in Economics and related sciences. This results in a very eclectic mix of participants, from the major commercial publishers, university presses, research centres, central banks to university departments, in 63 different countries on all continents.

The data collected by RePEc are in the public domain, and thus anybody can open a RePEc service that makes the bibliographic data available to the public in one way or the other. For example, there are websites that allow to search or browse through the data. Of particular interest here is NEP, a collection of mailing lists that we describe and analyse below.

All services displaying RePEc data are free to users, as they are completely supported by dedicated volunteers. They are thus equally open to anybody, regardless of location. It should be noted that RePEc holds information about research and where it is located, not the research itself. Thus, one may still need to have a subscription to access an article, if necessary. It remains that the ready

availability of the bibliographic data has democratised research, for those performing it, those publishing it and those reading it.

With respect to Heterodox Economics, RePEc is an opportunity, as it does not select on the basis of methodology or field what is included in the database. Some have contended that heterodox research is discriminated against in the major research outlets. RePEc has no way to do this. It basically lets users select what is useful.

Publication delays, extraordinary long in Economics, have always meant that reading working papers is the best way to keep abreast of new developments. Before RePEc, this gave a huge advantage to the top research departments, who could exchange their working papers. Now, everyone is on equal footing, possibly explaining why the dominance of the top departments is not as strong anymore.

NEP and dissemination of research

NEP (New Economics Papers) is an announcement service which filters information on new papers added to RePEc into thematic lists edited by human editors. It was founded by Thomas Krichel in 1998 (see Bátiz-Lazo and Krichel, 2005 for a brief history of NEP).

NEP plays a central role in disseminating papers. Any recent working papers that is available online is a candidate for dissemination through a NEP report. Each report has an editor in charge of a particular field (currently 83 fields are covered, edited by 62 different people). On a weekly base, working papers inserted in RePEc are listed and presented to the NEP editors. The editor picks among the available papers those he or she deems to be relevant. This sorting is facilitated by an expert system algorithm that learns from past choices. Despite this help, editors perform little quality control besides topical relevance. Thus, it gives a chance to every paper to be read.

RePEc monitors how many times papers are downloaded through its services. It is thus possible to analyse these statistics. Regarding NEP, it appears quite strongly that a paper is most downloaded right after it appears in RePEc, and this is foremost due to its dissemination through NEP.

The role of NEP in disseminating heterodox research can be seen from different perspectives. First of all, NEP management allows a great level of democracy and openness of the system and the chance of contamination among areas. Editors' discretion in the selection of papers is complete as the only supervision they are subject to is the timeliness of their reports. Except for some quality control in the selection of papers (see Bátiz-Lazo & Krichel, 2005), there is no real tentative of refereeing papers that would encourage conformity and limit the diffusion of new and non-mainstream research (see Frey, 2002). Editors come from varied backgrounds, including age, professional status (from PhD students to full professors publishing in the top journals), location and affiliation (including outside academic departments). Especially in the last years, the number of female editors has started to become quite significant.

Some of the NEP reports include papers in languages other than English. Each report is dedicated to a subfield of Economics, but overlaps, sometimes significant, allow reports with different perspectives. In this way, there is less dependency on the interest and approach of any specific editors.

This diversity allows to satisfy the interests of a wide range of possible research communities. The availability of NEP reports for Heterodox Economics creates both demand and supply in such research, through subscriptions to the mailing lists (demand) and through submissions of papers to RePEc (supply). NEP reports are similar to journals in disseminating papers in specific areas, but without the quality certification of papers through the peer-review system.

In this respect, NEP is certainly open to heterodox areas. It is not easy to compare the ratio of heterodox to mainstream journals with the proportion of heterodox NEP reports, as classifying a journal or report as heterodox can be arbitrary. Yet a certain number of reports which can be classified as non-mainstream with some certainty, based on the general topic, the kind of papers inserted, and the background of their editors: nep-cbe (Cognitive and Behavioural Economics), nep-pke (Post-Keynesian Economics), nep-exp (Experimental Economics), nep-hap (Economics of Happiness), nep-ltv (Unemployment, Inequality and Poverty), nep-neu (Neuroeconomics), nep-soc

(Social Norms and Social Capital), nep-upt (Utility Models and Prospect Theory) and in some way also nep-his (Business, Economic and Financial History), and nep-hpe (History and Philosophy of Economics).

Assessing how much heterodox economists are using NEP is difficult as there is no report specifically tailored to the field. We also do not know much about the potential subscribers pool, as the number of economists calling themselves heterodox cannot be established. Finally, the analysis of subscriber numbers is strongly biased by the age of the reports, efforts editors make to attract new subscribers, and the involvement of the relevant communities in terms of mailing lists and conferences where specific NEP reports could become known.

Despite these measurement issues, it is significant that two of the top twenty NEP reports by the number of subscribers are clearly heterodox (as of March 3, 2008), and they are among the six newest ones of the top twenty. Regarding growth rates over the last year, among the new lists, the highest was again for a heterodox report, nep-hap. We believe that NEP is a most welcome service for heterodox economists, and they probably use it proportionally more than mainstream economists.

But we have a good way to assess whether users appreciate a NEP report: looking at the mean rate of downloads. To conduct this analysis, we considered a sample of general heterodox lists: nep-cbe (Cognitive and Behavioural Economics), nep-pke (Post-Keynesian Economics), and nep-soc (Social Norms and Social Capital). These are quite different reports, with a small intersection between papers and subscribers. Some data to exemplify this statement: 11% of nep-cbe subscribers also subscribe to nep-soc, 6% to nep-pke, and 5% of nep-pke users also subscribe to nep-soc. With respect to other heterodox lists, these are probably the ones with broader areas of interest (more than nep-hap or nep-exp, for instance).

As examples of general mainstream reports we consider nep-mic (Microeconomics), nep-mac (Macroeconomics), nep-mon (Monetary Economics), nep-gth (Game Theory), and nep-law (Law and Economics). All of these could include also heterodox papers, but their eventual percentage is rather low. Even the report on game theory includes some heterodox experimental papers.

Specificity of a report is relevant for the analysis we are going to conduct, as it could influence the mean percentage of downloaded papers. The more a list is specific, the more its papers are relevant and interesting to subscribers. More general lists require subscribers to perform a further selection of papers. Obviously it is not possible to measure the level of specificity. To overcome this problem, we tried to select quite different areas as the ones shown. To test the robustness of our results, we also leave out the reports on Macroeconomics and Monetary Economics because they include a higher mean number of papers, another variable which should influence mean downloads. It seems probable that if someone finds ten papers in one's area of interest, one has to make a selection, while if one finds just two, one probably has a look at both of them.

The analysis considers six different issues for any of the select lists, on the same six dates d1 ... d6: 2007-01-13, 2007-02-10, 2007-03-10, 2007-04-14, 2007-05-12, and 2007-09-09. In the period under analysis, the selected mainstream lists have a higher mean number of subscribers (Table 1). This doesn't mean that all mainstream lists under analysis have more subscribers than all heterodox ones. The mean difference is mainly due to one of the heterodox reports. In the last date under analysis, the difference, excluding Macroeconomics and Monetary Economics, is very tiny.

If we consider the mainstream list, even without nep-mac and nep-mon, we can see that they often have more paper announcements than heterodox ones (Table 2).

Table 4 shows the mean number of downloads for each announcement. Heterodox reports have higher values for all dates considered. Table 5 shows the same number, but divided by the number of subscribers. Again, heterodox reports have higher values and differences. All individual heterodox reports have higher values than all the mainstream ones.

Table 1. Mean number of subscribers by type of report

| | d1 | d2 | d3 | d4 | d5 | d6 |
|---|-------|-------|-------|-------|-------|-------|
| Mainstream reports with nep-mon and nep-mac | 674.0 | 679.6 | 688.6 | 700.0 | 711.0 | 619.4 |

| | | | | | | |
|--|-------|-------|-------|-------|-------|-------|
| Mainstream reports without nep-mon and nep-mac | 611.0 | 615.0 | 624.7 | 633.7 | 644.3 | 546.3 |
| Heterodox reports | 459.0 | 470.7 | 481.0 | 499.0 | 511.7 | 512.0 |

Table 2. Mean number of papers announced, by type of report

| | d1 | d2 | d3 | d4 | d5 | d6 |
|--|------|------|------|------|------|------|
| Mainstream reports with nep-mon and nep-mac | 32.4 | 23.0 | 20.8 | 15.8 | 26.0 | 17.6 |
| Mainstream reports without nep-mon and nep-mac | 19.0 | 10.0 | 11.3 | 7.0 | 10.3 | 9.0 |
| Heterodox reports | 5.7 | 11.0 | 14.0 | 5.7 | 10.7 | 7.3 |

Table 3. Total number of downloads by type of report

| | d1 | d2 | d3 | d4 | d5 | d6 |
|--|-------|------|-------|------|------|------|
| Mainstream reports with nep-mon and nep-mac | 103.4 | 98.8 | 105.8 | 61.2 | 80.2 | 70.8 |
| Mainstream reports without nep-mon and nep-mac | 63.4 | 53.7 | 50.0 | 50.0 | 36.0 | 32.0 |
| Heterodox reports | 45.0 | 84.7 | 87.0 | 55.7 | 99.7 | 60.0 |

Table 4. Mean downloads per paper, averaged over reports

| | d1 | d2 | d3 | d4 | d5 | d6 |
|--|-----|-----|-----|------|-----|-----|
| Mainstream reports with nep-mon and nep-mac | 3.4 | 4.9 | 5.2 | 5.2 | 3.8 | 3.7 |
| Mainstream reports without nep-mon and nep-mac | 3.4 | 5.3 | 4.8 | 6.5 | 3.8 | 3.1 |
| Heterodox reports | 7.8 | 7.4 | 6.2 | 10.3 | 8.9 | 7.5 |

Table 5. Mean downloads per paper and subscriber

| | d1 | d2 | d3 | d4 | d5 | d6 |
|--|------|------|------|------|------|------|
| Mainstream reports with nep-mon and nep-mac | 0.5% | 0.7% | 0.7% | 0.7% | 0.5% | 0.5% |
| Mainstream reports without nep-mon and nep-mac | 0.6% | 0.8% | 0.7% | 0.9% | 0.5% | 0.5% |
| Heterodox reports | 1.4% | 1.4% | 1.1% | 1.6% | 1.6% | 1.3% |

While Tables 4 and 5 indicate that mainstream and heterodox reports are different at each date, statistical tests make it clear. Using the Kruskal-Wallis non-parametric test, we reject the null hypothesis that the mainstream and heterodox reports come from the same population with a p-value of 0.021 for Table 5. For Table 4, results are not as clear cut, with dates 1, 5 and 6 significant (p-values of 0.025, 0.025, respectively 0.072), while the p-values for the remaining dates are 0.131, 0.655 and 0.180. Obviously, the small samples we are working with widen the confidence bands.

We can conduct another test. Each paper can be seen as an observation. It can be part of one of two possible groups: heterodox or mainstream. We can use these observations to test for the following hypothesis: H_1 : heterodox papers have average higher mean download, H_2 : heterodox papers have average higher mean download per subscribers. Take, as an example, date 6 where we have a sample of 49 papers, 22 heterodox and 27. For each observation, we have a number of downloads and a number of downloads per subscriber. We can compute again two mean values for each variable. The average mean download for heterodox papers is 8.1 vs. 3.6 for mainstream papers (these values differ from Table 4 as we are using individual paper data instead of report data). The average mean downloads per subscriber for heterodox papers is 0.014 vs. 0.006 for mainstream ones. We can now test our hypotheses using the analysis of the variance (as now we have bigger samples) or the Kruskal-Wallis non-parametric test. In both cases we reject the null hypothesis with both tests (p-value is always less than 0.004).

We obtain similar results for the other dates. The above analysis was performed while excluding nep-mac and nep-mon. The results are stronger including them.

We need to consider an additional point in our analysis. A paper may be announced in several reports. Also, a researcher may have subscribed to several reports. Thus, a paper may be

downloaded from only one of the reports. Our analysis indicates such overlaps are negligible and should not taint our results: A paper announced in a heterodox report is on average also announced in 4 other reports, not necessarily heterodox. For mainstream reports, it is slightly less. A subscriber to a heterodox report has a 11% chance of subscribing to another heterodox report, for the mainstream reports in our sample, this proportion is 12%. But a case by case analysis shows that there is very little overlap in the sense that very few subscribers would see the same paper in several reports.

As said, the number of downloads may depend on many factors we cannot control for, as usual in a statistical analysis. Yet we believe the results are quite strong, even given the small samples.

There are many possible hypotheses for explaining them. Heterodox scholars may have more difficulties in finding papers of their interest in regular journals. They may also, in some cases, have less access to pay journals, as the lower impact of heterodox studies have less impact, and thus command less research. Mainstream researchers have it easier as they can download mainly papers from well known authors or series. In the heterodox areas authors or series are more obscure. Whatever the explanation, our results, show how heterodox research takes advantage of NEP.

A last point has to be noted. As said, some reports can contain both heterodox and mainstream papers. Therefore, NEP helps in creating some cross-fertilization among research areas. Furthermore, all reports, including those covering heterodox fields, stand on an equal footing on the NEP webpage where economists can subscribe. This implicitly gives more legitimacy to heterodox research and should encourage all economists to view it as an equally relevant research field.

Conclusion

We show how RePEc and NEP try to pursue democracy and help in the dissemination of research. We also show how heterodox communities can and have benefited from this system, because they need new ways for disseminating research.

We concentrate our attention on the demand side. Measuring how many heterodox papers are submitted to RePEc is particularly difficult, as it pertains to a methodology rather than a topic. It is therefore rather hard to compare the relative performance of heterodox areas. Over the last year, both RePEc and NEP have continuously grown. All kinds of papers are submitted, new heterodox reports have been created, mainly in the areas of economics and psychology. It is safe to say that compared to several years ago, the number of heterodox papers submitted is much higher and constant. Probably more can be done, especially in areas like History and Methodology of Economics, to increase the number of papers and their dissemination. In particular, we need to encourage some heterodox communities to use RePEc and NEP , both as contributors and as consumers.

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