

Revealed Performances

Worldwide Rankings of Economists and Economics Departments

1969-2000

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Abstract

This paper provides a worldwide ranking of economics departments and economists.

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I am 131000+ in my ranking. I thank Mathias Dewatripont, Gerard Roland and Frederic Warzynski and several visitors of my homepage for helpful comments, Barry Hirsch, David Laband and Loren Scott for sending me their page-size corrections and the Belgian federal government (PAI 4/28) and the European Economic Association for financial support. Of course, errors are mine.

Introduction

In a time that so much is said and written, especially by economists, about the globalization of the economy, it is surprising to see the ‘localism’ when economists play their ranking-games. US economists rank US institutions (for example, Scott and Mitias (1996-SM from here))¹, Canadian economists restrict themselves to the Canadian departments (Lucas (1995)), Asian economist focus on Asian departments (Jin and Yau (1999)) and Australian economists look at Australian Departments (Harris (1990)). Only recently, the ‘European single market’-idea has reached the rankings with the publication of a ranking of European departments based on 10 top journals (Kalaitzidakis, Mamuneas and Stengos (1999-KMS from here)) but earlier on, Dutch economists had ranked Dutch economists (for example, De Ruyter van Steveninck (1998)), Belgian economists had restricted themselves to Belgian departments (Bauwens (1998)) and German economists had focused on German-speaking economists (Bommer and Ursprung (1998)). Here, we will take the final step further and provide a worldwide ranking of departments and of economists, using more than 30 years of data (1969-2000)².

Another, often heard, critique on rankings is that rankings only use a limited number of journals. The European ranking mentioned above is based on 10 journals and the most recent US ranking is based on 8 journals. Departments or individuals unsatisfied with their ranking find a powerful excuse in this narrowness. Here, we will compute rankings that are based on different samples of journals, one sample even using up to

¹ The only exception is Hirsch, Austin, Brooks and Moore (1984). Recently, some other papers on the output of economics departments worldwide have been presented (based on 15 journals, Kocher and Sutter, 2001 and based on 30 journals, Kalaitzidakis et al (2001)). Bauwens et al (2001) present a new European ranking and compare European departments to departments in California.

² In this article we focus on the period 1990-2000. For rankings on shorter and longer periods, see <http://homepages.ulb.ac.be/~tcoupe>.

700 different journals. Of course, using many journals raises the point of quality-differences among these journals. Therefore we will also construct weighted rankings where the weights are based on the citations that were received by the journals in the recent past (as given by the Journal Citation Reports). Several weighting schemes will be used such that the excuse that ‘we were disadvantaged by the specific weighting scheme’ will be more difficult to defend. In addition, rankings based on the number of citations will be presented.

Finally, we will show how the performance of universities has evolved over time. Our database covers the period 1969-2000 for economists and 1990-2000 for institutions. This allows us to look at how the institutional rankings evolved during the nineties. By mimicking the method used by Hirsch, Austin, Brooks and Moore (1984-HABM from here) for the period 1978-1982, we will also be able to show how the performance of the universities changed over a longer period of time. It will also allow us to show what happened with the gap between the US and the European/non-US universities.

The data and the ranking methodologies

As our main source of data, we use the Econlit database. In the period 1969-2000, some 800 journals have been indexed by Econlit, so one can claim with a slight exaggeration, first, that if one is not in Econlit, one did not do academic research in economics and second, that these journals together form the ‘economics literature’³.

³ About 800 journals have been included at least once. About 10% of these have been included every year since 1969. See my homepage for information on which journals were included when.

Since the late eighties, Econlit includes the affiliation of the authors in its database⁴. This enables us to rank both economists and their departments. Unfortunately, however, Econlit neither standardizes the names of the authors, nor standardizes the names of the universities. Careful inspection, combined with numerous searches on the Internet, did reduce this problem to a large extent (though some problems can not be resolved, for example, if 2 people or institutions have identical names - see appendix A1 for a more detailed description of the standardization process).

Other controversial decisions have to be made besides those due to the standardization. First, there is the weighting of co-authors. Should a paper written by two authors be considered as equal to a paper written by one author or not? And what if the author of a paper indicates an affiliation to more than one institution. We follow the literature by simply ascribing $1/n^{\text{th}}$ of a paper to the n authors of that paper, a choice that can be defended on the work of Sauer (1988) who found that the monetary value of papers (in the wage equation) follows such a rule. A similar rule is applied with respect to the affiliations^{5,6}.

[INSERT TABLE 1 HERE]

Second, there is the question of what to count, the number of articles or rather the number of pages. Both alternatives will be considered here.

⁴ This implies that we use the affiliation at the time of writing or publishing and not current affiliation. For the differences between 'stocks' and flows see for example, Hogan (1984).

⁵ If an article is co-authored by more than three persons, Econlit only gives the name of the first author. The bias thus created is small, as such articles are very rare (the distribution of the number of co-authors during the nineties is as following: 57.2% is written by one author, 31.1% is written by two authors, 9.3% by three and 2.4% by four authors or more). Note that we attribute $1/4^{\text{th}}$ of the articles' value to the first author of an article that is coauthored by more than 3 authors.

⁶ Of course, more interesting would be to see the effect of co-authorship on citations. Studies have shown a positive effect on citations (for example, Johnson (1997)).

A third source of disagreement is about which journals to include. We decided to start with all journals that are part of Econlit, hence including journals that are somewhat peripheral to economics like the Yale Law review or the American Political Science Review. This implies that not only pure economists will be counted and hence that the departments are economics departments in a large sense.

Fourth, one should be aware of possible selection bias as Econlit is likely to be somewhat English language biased in the sense that the unimportant English language journals are more likely to be included than non- English language unimportant journals.

A fifth problem is due to the quality differences between journals (and articles)⁷. Citations seem to be the most appropriate criterion to rank journals (and are also most frequently used). We will use different weightings that are based on such citation analysis⁸. First, we will use the average of the impact-factor between 1994 and 2000, the impact factor being equal to the citations in year T to the articles published in journal Y in T-1 and T-2 divided by the number of articles published in Y in T-1 and T-2. This reflects the number of citations that can be expected for an article published in Y, measured one to two years after publication. This impact factor is available for 273 journals. Some might find two years of citations too short, so we also use the four versions of the Laband-Piette (1994-LP from here) index. This index is based on 5 years of data but is less recent (1990 citations to articles published between 1985-1989). We will also use their ‘adapted’ index, which adapts for different page-size, gives higher weights if citations are from higher quality journals and gives a zero weight to citations from non-economics journals. The disadvantage is that this LP

⁷ Some other problems like insider-bias and the composition of Econlit and the SSCI are analyzed in Appendix A2.

⁸ Mason et al (1997) show that journal rankings based on citations do correlate positively with the rankings based on a reputation survey.

index is only available for a limited number of journals: 121 for the articles ranking and 71 for the pages ranking⁹. At the other side, the journals thus included are economics journals in a stricter sense.

As one could notice, using citation based-weightings forces us to drop a high number of journals¹⁰. The method of Bauwens (1998) does solve this problem in an ad hoc way: it gives each journal a weight between one and five on the basis of the product of the impact factor and the total number of citations received during a given year (the latter more reflecting the long run) and then gives weight 1 to journals not included in the JCR but included in Econlit, because the non-JCR included journals are quite likely to be rarely cited ones¹¹. Of course, this procedure also disadvantages the top journals as it shrinks the weighting difference between the top journals and the other journals (because an article in the AER would be equal to only 5 articles in the Rummidge Economic Journal, while the product as described above would give a difference of, say, 200).

Important to note is that, like Econlit, the Journal Citation Reports might be biased towards the English language journals.

We also replicated the ranking, based on the number of pages published in ten top journals, of KMS (1999). By restricting to these 10, one gets a ranking based on top publications.

As 11th methodology, we take the 24 journals and the page-size corrections used by HABM (1984) to rank economics departments on their number-of-pages-production

⁹ The difference is due to the fact that we only had the page-size normalizing weights for 71 journals (normalizations provided to us by David Laband).

¹⁰ For a list with journals and weightings see <http://homepages.ulb.ac.be/~tcoupe>.

¹¹ We slightly deviate from Bauwens method: we take the average of the impact-factors and citations between 1994 and 2000 and we use these for all journals included in the Journal Citation Reports.

in the period 1978-1982. Finally, we will compute a ranking based on the 36 journals and the page-size corrections used by SM (1996) to rank both economists and economics departments over the period 1983-1994. These last two rankings will allow us to make some comparisons over a longer period of time.

The above rankings all weigh articles and pages by the quality of the journals in which they were published. This approach is often criticized on the ground that even in high quality journals one can find low quality articles. Therefore, we will also present 3 rankings that are based on the citations the articles received.

To be able to compute these citation-based rankings, we linked the articles included in Econlit to the articles included in the Web of Science. The Web of Science indexes articles published between 1975 and 2000 and gives for each of these articles the total number of citations (including self-citations) since the date of publication. Note that linking the Web of Science to Econlit has the advantage that, with the exception of those papers that have more than three authors, citations are not attributed to the first author only as has been the case for previous citation based rankings (Garfield (1990), Medoff (1996)).

So to be counted, an article should be:

- published between 1975 and 2000
- included in Econlit¹²
- included in the Web of Science

Hence, not only those journals that are considered as economics journals by the JCR. We also included the Belgian journals but excluded the 2 'reviews' included in Econlit.

¹² There are a small number of journals, mostly journals recently included in Econlit, which are not taken into account. See appendix A1 for a list.

Of course, these rankings also has shortcomings:

- citations to books are not included (for example, William Greene's Econometric Analysis has several hundreds of citations)
- citations to unpublished manuscripts are not included
- citations to articles not included in Econlit are not included (for example, Thaler's 'Toward a Positive Theory of Consumer Choice', published in the Journal of Economic Behavior and Organization in 1980 and cited 394 times, is not included)
- citations to articles published before 1975 are not included (for example, Barro's 'Are Government Bonds Net Wealth?', cited 937 times since 1974, is not counted).
- Self-citations are included.

One should be aware of these limits when interpreting the citation rankings.

Our first citation based measure is a simple count of the number of citations, weighted for co-authorship and multiple affiliations

The second citation based measure, in addition, tries to correct for the fact that papers that have been published more recently have had less time to receive citations. To correct for this, we simply divide the total number of citations an article received by the number of years since publication.

Our last citation based rankings simply counts the number of citations to which a person or an institution has contributed. Hence, no corrections are made for differences in date of publication, multiple authorship or multiple affiliations.

The results¹³

A) *The Rankings of Departments*

1) **The Rankings of Departments Based on Articles and Pages Published.**

Space constraints prevent us from giving here the ranking for each methodology.

Instead, we give the top 200 for 4 different methodologies^{14,15}:

- The KMS ranking, using page-counts and includes 10 top-journals.
- The adjusted Laband ranking, using page-counts and includes 71 journals.
- The impact factor ranking, using article counts and includes 233 journals.
- The HABM ranking, using page counts and includes 24 journals and comparable to a ranking for 1978-1982.

Each methodology has some advantages and some disadvantages. Some take a limited number of journals, some include many journals but attach a lot (too much?) of weight to some top journals, other use no weights and take article counts rather than page counts etc.

The 4 methodologies we give here, each stress a different factor: one methodology focuses on publications in a limited number of top-journals, one takes a weighted page counts for a bigger set of journals, one taking weighted article counts for an even larger journal set. The fourth one is included because it is comparable to a previous ranking.

For the clarity of table 2 below, we use the mean over the 11 different rankings (methodologies) to order the institutions¹⁶. However, instead of stating that the Free University of Brussels-ULB ranks 115th worldwide, it might be preferable to say that it ranks between the 60th and the 160th place. As also dinnertime is limited, we are

¹³ For some more general background statistics see appendix A3.

¹⁴ On my web site one can also find the rankings according to the other methodologies.

¹⁵ See appendix A4 for an analysis of the correlation between different rankings.

aware that, in conversations, the reader will probably use the same average-based ranking. Nevertheless, we hope that one will keep in mind the underlying variance.

[INSERT TABLE 2 HERE]

Harvard is first on all 11 publication criteria we used, so it is not surprising to find it back at place one in the overall ranking. Second is Chicago, before Penn, Stanford and MIT. The first non-US university is LSE at 15, the first non-English language university in the nineties was Tel Aviv (but at the end of the nineties, this title goes to Tilburg).

To get an idea of changes in the production of economics departments, we also computed 7 rankings based on 5 year-periods (from 1990-1994 to 1996-2000)¹⁷. While even in the top 10 there are some changes over time, the universities that made it into the top 10 in 1990-1994 are also those universities that make it into the top 10 of 1996-2000. In the top 30, most notably are the rise of Texas at Austin and Oxford, and the decline of Rochester and Boston. Further down, big leaps forward can be observed for, among others, University College London, Erasmus U Rotterdam, Toulouse I, New South Wales, Hong Kong Institute of Science and Technology and Stockholm School of Economics. And not surprisingly, there are some major losers too. Overall, Europe's share in the top 100 increases from 14% to 26%.

When interpreting changes one should be aware that the composition of Econlit has changed over time, several journals have been added since 1990. These changes in the

¹⁶ The idea being that one should score high on all criteria. Of course, taking the mean implies an implicit weighting for the journals and also has some disadvantages see table 8.

¹⁷ See my web page for the tables.

journals that are included are likely to lead to changes in some rankings and hence also in the overall ranking¹⁸. In table 3, we therefore look at each ranking separately.

[INSERT TABLE 3 HERE]

Table 3 shows that Europe performs better when looking at the unweighted number of articles or pages or at the KMS ranking (they included the European Economic Review and the Economic Journal among the 10 journals they used). There is also a clear difference between the adjusted and the unadjusted LP ranking, with the former being more favorable to European departments. The HABM and the SM rankings finally seem to advantage the US institutions. Anyhow, all methodologies show a big gap between the US and Europe, with the number of US top 100 institutions being 2 to 3 times the number of European institutions. But they also show that Europe is catching up.

Changes over a longer period of time: a comparison with Hirsch, Austin, Brooks and Moore (1984)

Taking the same 24 journals, the same page-size-normalization¹⁹ and a comparable length of time (1996-2000)²⁰ as HABM did at the beginning of the eighties, should allow us to show how the performance of the universities changed over time. There are, however, some drawbacks which one should keep in mind: as other journals (than the 24 included) can have increased their relative importance, it might be that some

¹⁸ Moreover, often a difference of 5 places is only a matter of a few articles more or less.

¹⁹ Provided to us by Barry Hirsch.

²⁰ We take 5 years (1994-1998), they write: 'the time period includes 1978-1982, plus all 1983 issues prior to June'. Note that differences in the treatment of branch campuses might have an influence.

universities have done more substitution towards these new top-journals than others which obviously reduces the comparability over time. Moreover, as this methodology uses only 24 journals, one should be aware that one publication more or less could imply a drop or a rise of several places.

Looking at the top of the 78-82 HABM-ranking, we can see that Harvard now succeeded in beating Chicago: Harvard turned around a 20% lag at the end of the seventies in a 15% lead at the end of the nineties. At a considerable distance follow MIT, Stanford and Penn. Concerning the changes at the top, one should note the positive evolution of MIT, Princeton and NYU and the negative evolution of Yale and Wisconsin at Madison. Remarkable progress has been made, among others, by Duke, Texas-Austin, Brown and Pittsburgh. In contrast, Minnesota- Twin Cities and Rochester lost several places²¹.

Another important message of these comparisons, however, is that, while important changes do occur, rankings do not change radically even if we look over a long period of time.

As HABM's 1984 article included a list of the top 40 of non-US universities, we can also look whether or the US is still the dominant producer of economics literature²². In HABM's ranking, the London School of Economics turned out to be the only non-US university that could compete with the US top universities, taking the fourth place worldwide. The second non-US university ranked 19th and only 24 non-US universities got into the top 100. Further, in the worldwide top 100, 11 universities were located in Europe, 2 in Israel, 8 in Canada, the remaining three in Australia and

²¹ Comparisons are made more difficult by possible differences in the treatment of branch-campuses.

²² See Portes (1987), Frey (1993) and Frey and Eichenberger (1992) for some explanations ranging from 'politics as outside option for European economists' to 'lack of incentives to publish due to government management'

New Zealand. About 18 years later, the hegemony of the US is still unthreatened. The first non-US university is still LSE but it drops to the 15th place. European universities doubled their presence in the top 100. Oxford (+ 4)²³, Cambridge (-12), Warwick (+26), Essex (+42), Southampton (+1), Bonn (-9) remain in the top 100, Birkbeck just misses the top 100 while Birmingham, York and Bristol declined considerably. But 14 new European institutions deserved their place in the top-league, bringing the total of Europe on 22. The freshmen are University College London (from 112 to 21), Toulouse I, Tilburg, Pompeu Fabra, INSEE, Nottingham, Erasmus University Rotterdam, Brussels-ULB, Stockholm School of Economics, London Business School, University College Dublin, Stockholm, Carlos III and Autònoma de Barcelona. Canada loses 2: Carleton, Alberta, Simon Fraser and McMaster failed to repeat their performance of the end of the seventies but Montreal and Laval now entered the top 100. The representatives of Israel remain Tel Aviv and Hebrew University but both lost several places in the ranking. Australian National University drops 55 places to number 86 and loses its place as first Austral-Asian university to the Hong Kong University of Science and Technology. The Chinese University of Hong Kong and the University of New South Wales complete the list of non-US institutions in the top 100 and bring the result on 34 non-US versus 66 US institutions.

2) The Rankings of Departments Based on Citations.

Next we look at what happens if we count citations rather than publications. The table is sorted on the weighted citation counts (for multiple affiliations and co-authorship)

²³ + 5 means that it gains 5 places!

but we further include the rank based on an unweighted citation count and a weighted citation count that tries to control for differences in time since publication. These time since publication differences are important: an article published in 1990 has 10 years to be cited, an article published in 2000 just 1 so the articles published earlier in the period under consideration will have larger weights. Moreover, different universities might specialize in different sub-disciplines that not only have different citation-propensities but these sub-disciplines might also have different citation time lags (i.e. an article from one disciplines might be cited, on average, faster than an article from another sub-discipline).

[INSERT TABLE 4 HERE]

Harvard is not only the biggest producer of articles; it is also the biggest generator of citations. Chicago is again second and Berkeley, Stanford and Penn complete the top 5. LSE is the first non-US at rank 16.

By looking at 5-year periods, we can see that departments that see their citation-impact decline are Rochester and Illinois at Urbana Champaign. Columbia and Oxford in contrast are getting better. Impressive are also the rise of Toulouse I (from 172 at the beginning of the nineties to 54 now) and the drop of Copenhagen (from 19 in 1990-1994, to 141 in 1996-2000). The latter case is a nice example of the importance a few articles can have. Some of the most cited articles at the beginning of the nineties (all having several hundreds of cites) have been written by scholars from this department, Soren Johansen and Katarina Juselius on cointegration. From 1996 onwards these publications fall away which leads to serious drop in its ranking.

[INSERT TABLE 5 HERE]

Table 5 shows that also in term of cites, the dominance of the US is very clear: in the nineties, 69 out of the top 100 academic institutions were located in the US. But again, Europe is catching up: at the moment, it has 28 institutions in the top 100 against 18 at the beginning of the nineties.

Note finally that the most cited economist, Soren Johansen who generated 1538 coauthor-weighted cites during the nineties, would be at place 49 in this ranking of universities!

3) Some Overall Impressions

- Harvard has been the top economic producer during the nineties, both in terms of articles, pages and citations. At the second place comes Chicago. The top 5 often included Berkeley, MIT, Penn and Stanford, and a few times Northwestern and Michigan at Ann Arbor. Outside the US, it is LSE that contributes most to the Economics Literature.
- Rankings are quite stable: it's unlikely that a university that is not in the top 20 today, will be a top 10 university in 5 years. A bit further down the ranking, big changes are possible, there are several examples of universities that jump more than 100 places to enter into the top 100.
- The US dominates clearly, more than half of the top 100 universities are located in the US. Nevertheless, Europe is clearly catching up, whatever weighting method one uses, from about 15 universities in the top 100, it now has about 30 universities within the class of top institutions. And Europe wins

these places from the VS rather than from the rest of the world. However, there is no university outside the US that really belongs to the ‘*primi inter pares*’.

If we compare these numbers to the parts in either the total number of institutions or the total number of economists in these regions, one can see that both the US and Canada harbor more top universities than can be expected, while Europe, Asia and Australia are seriously underrepresented.

4) Size Differences

Until now, we did not correct for size-differences between universities: universities that employ a lot of professors will publish a lot simply because of their size, even if the individual professors publish relatively few papers, and hence will get a high ranking. DV (1998) solve partially this problem by asking the different departments for the names of their faculty²⁴. However, this is only feasible because they limit themselves to 80 US top institutions. In addition, if one is interested in a universities’ reputation then this critique is less valid as the visibility of a university will also be influenced by its size, though DV (1998) find not that high a correlation between subjective studies and their output-based studies (between 60% and 80%).

Table 6 shows the rank-correlation, computed using only those institutions that scored on all rankings, of the different rankings and a count of the number of employees of an institution (based on the affiliations mentioned on the most recent publication).

²⁴ Partially because this does not correct for differences in for example, teaching loads of these people. For US institutions one could use faculty list included the ‘guide to graduate study in economics’ of the Economics Institute of the University of Colorado, Boulder.

[INSERT TABLE 6 HERE]

As one can see, the correlation declines with the number of journals included, but even for the latter, the correlation is fairly high. Hence, size is important. It also explains the big gap between the numbers one and two, Harvard and Chicago: 652 economists have Harvard as their most recent institution while only 295 have Chicago.

As an experiment we calculated where a “Brussels School of Economics”, merging the different Belgian Economics Departments, would rank. Such an institution would have 673 people that have it as their latest affiliation (close to Harvard’s number of 652) and total a score on the HABM-methodology of 1250 points (Harvard’s score being about 7400), which would lead to a 36th place, *ceteris paribus*...

One relatively easy method that (partially) corrects for the size-bias is restricting the number of people that we take into account for the computation of the university total. So instead of summing over all people that mention university X, we could compute the ‘mean’-rankings that would result when only taking the 5, 20 and 50 best performing scholars²⁵. The results of such an exercise are given in table 7.

[HERE TABLE 7]

²⁵ This way of ranking is comparable to a soccer world championship. Every country picks his 22 best players.

As one can see some fairly radical changes are the consequence: if only taking five or twenty scholars, MIT wins the first place before Yale, Harvard, Chicago and Princeton, though taking 50 scholars again brings Harvard at the top. Most striking however is the U Toulouse I that jumps from 73 (overall) to 11 (top 5) worldwide.

Not surprisingly, increasing the number of scholars makes the ranking more similar to the overall ranking, more so for the lower ranked universities (that tend to be smaller). Anyhow, the impact of these size-corrections again stresses the importance of being aware of the variability.

***B) The ranking of the economists*^{26,27}.**

Next we look at the rankings of individuals.

1) The Rankings of Economists Based on Articles and Pages Published

[INSERT TABLE 8 HERE]

Peter Phillips (Yale) has been the most productive economist in the period 1990-2000, even though his mean rank (over the different methodologies) is 7.6. This specialist in Quantitative Methods succeeded in publishing 11 articles in *Econometrica*, 11 in the *Journal of Econometrics* and several articles in ‘smaller’ journals. Note that with his score, he would be about 133rd in SM ranking of institutions... Second is Jean Tirole with an average rank of 10.1. 2000 Nobel Prize winner James Heckman, Alan Krueger, 2001 Nobel Prize winner Joseph Stiglitz, Donald Andrews, W. Kip Viscusi, Jean-Jacques Laffont, 1998 Nobelprize winner Amartya Sen and Bruce Smith complete the top 10.

²⁶ Our choice to order on the basis of the average rank implies that those who did not rank on a specific methodology are pulled down several ranks. This again stresses the importance of taking into account the variance!

²⁷ For an analysis based on the CV’s of top economists, see appendix A5.

Jean Tirole at two is the highest ranked economist that is affiliated to a European University, in casu Toulouse. Note that of the top 100 economists only 14 are (principally) affiliated to a non-US based institution²⁸! Not only the lack of non-US economists is remarkable, the same can be said about the lack of women in the top. If we use the name as an indicator of gender, we find only 1 woman in the top 100: Karen K. Lewis has been the most productive female economist at place 73.

2) The Rankings of Economists Based on Citations²⁹

Next we look at the citations counts. Table 9 is sorted on the total number of cites, weighted for co-authorship, to articles published between 1990 and 2000. The second column gives the rank if we weigh (inversely) citations by the number of years since publication, the third column gives the rank if we use unweighted citation counts.

[INSERT TABLE 9 HERE]

First in the citation ranking is Soren Johansen. Thanks to his top cited papers (887 and 615 cites) on cointegration written at the beginning of the nineties, he is first on the three different citation rankings. In the overall publication ranking he was only at place 302, which indicates that one or two break-through papers can place you very high in the ranking. Second comes Robert Barro, before Paul Krugman, Donald Andrews, Peter Phillips (the number one of the publication ranking), Paul Romer,

²⁸ Of the top 500, 77% is US-based.

²⁹ One of the disadvantages of citations is that one paper can be sufficient to be at the top of the ranking. As a consequence, non-economists having written a highly cited paper that is included in Econlit will be included in this list.

Eugene Fama, Katarina Juselius (coauthor with Johansen of one of the cointegration papers), Ross Levine and Andrei Schleifer³⁰.

As was the case with different methodologies for publication counts, different citation count methods give different (though highly correlated) results. More aggregate statistics, however, remain more stable: there's only one woman in the top 100 and the share of non US based economists in the top 100 remains very low (15 in top 100, 100 in the top 500).

DV (1998) looked whether the publication of articles helped in building a 'reputation' for universities by comparing their rankings with those of US News and World reports and of the US National Research Council. The same question can be asked for individual economists. To shed some light on this issue, we use a recent article in The Economist (19/12/98), which 'canvassed opinion among older economics professors' about 'who are the economists 35 and under tipped by the cognoscenti for future Nobel prizes'. We computed the average ranking for the 5 years preceding this article (period 1994-1998) to see to what extent these expert judgments were based on publications.

[INSERT TABLE 10 HERE]

It is clear that the people cited by The Economist are all top publishers. Still, those nine were certainly not the top nine of the economists under 35: Daron Acemoglu (age 32 in 1998) ranked 12th, David Martimort (age 32 in 1998) ranked 141st and Thomas Piketty (age 28 in 1998) ranked 174th.

³⁰ Because one highly cited paper is enough to rank very high, the citation list might contain people that are not really economist but have a highly cited paper included in Econlit.

The right side of the table gives the rankings of those that were the ‘young stars’ of 10 years ago. 5 of them were among the top 100 of the nineties so the predictive power of the Economist was substantial. Note that Grossman is, according to the Economist, the wealthiest one...thus confirming Stern’s (1999) conclusion that ‘scientists do pay to be scientists’!

Some concluding observations

More than 10 years ago, Colander (1989- ranked 866th) wrote: ‘My own general feeling is that the ranking game has been beat to death. Everyone knows that any ranking loses important dimensions and, among those active in the profession, the information about which schools rank where is known more precisely than the rankings disclose, especially in view of how quickly top individuals move from school to school and how quickly topics considered important change... If rankings primarily tell either what one already knows... why the enormous interest in them? The answer, I believe, lies in their political (show them to the dean to support your budget increase request), psychological and sociological (show them to your friends to make them feel worse and you feel better) roles. More rankings increase the probability that one’s school will have done well in one of them; cognitive dissonance takes care of the rest.’

Should such criticism refrain the individual, intending to make a ranking, from pursuing those plans? Certainly not: if the ranking is published (and several rankings indeed have been published since 1989), a line can be added to the CV. So the individual rationality constraint seems to be fulfilled here³¹.

³¹ Of course, it also depends on the utility cost of the time spent on making a ranking.

Is it 'socially' valuable? Even if the demand for rankings is purely non-academic (political, psychological or sociological), it remains socially defensible to produce rankings. But in that case, one could wonder why journals with serious scientific reputation and not known for their propensity to print leisure-lecture, like the Journal of Economic Literature, Economic Inquiry, the Journal of Economic Perspectives or European Economic Review do publish them. A past president of the European Economic Association, Jean-Jacques Laffont (1999-rank 8th) notes 'Economics is today an international science for which there is a large consensus about the evaluation of quality. Journals with international editorial boards are a powerful instrument of objective, non-captured measurement that we do not use enough in Europe. Through publications in the European Economic Review, the European Economic Association wishes to make easily available measures of performance to promote excellence in research and teaching'. Hence, like any purely academic article, this article should stimulate others to produce new, more and better academic articles ...

Appendix

A1) The Construction of the Database

For each year XX, I searched for: 'journal in dt and py=19XX' in Econlit and downloaded the results. At the end of 1999 for the period 1994-1998, then I added the years 1988-1993, then 1969-1987 to finish mid 2001 with 1999-2000. Econlit sometimes adds less important articles/journals with a lag. Therefore, especially for the later years, not all articles included in Econlit are included in my database. The next table compares the number of articles in my database with the number of articles in Econlit at the end of May 2002.

[INSERT TABLE A1 HERE]

Until 1995 almost all articles in Econlit are included in my database. For more recent years, coverage is slightly smaller (ranging from 80% in 2000 to 96% in 1997). Note however that the missing articles are always those in smaller journals.

For each of these articles I downloaded information on the

- names of the authors
- affiliations of the authors
- journal in which it was published
- number of pages
- publication year
- JEL-code

Note that the JEL code is the Econlit JEL code which can differ from the JEL code mentioned on the printed paper. A team of Econlit assigns JEL codes to the articles,

taking into account but quite often deviating from the original codes chosen by the authors.

One disadvantage of Econlit is that names of authors and institutions are not standardized. For example, my own university, the Free University of Brussels is included in the Econlit database through

- ECARE
- DULBEA
- Free U Brussels
- ULB
- ...

All these different names were manually (!) ‘uniformed’ to Free U Brussels³².

A difficult problem was the mapping of research centers that belong to several universities. For example, the Dutch Tinbergen Institute is a cooperation of the Erasmus U Rotterdam, the U Amsterdam and the Free U Amsterdam. If an author mentioned as affiliation ‘Tinbergen Institute, U Amsterdam’, we attributed the article to the U Amsterdam. If only ‘Tinbergen Institute’ was mentioned, we attributed one third of the article to each of the three universities. The same strategy was used for the French CNRS-centers (which explains why the French institutions have faculty with on average a lot of affiliations)³³.

³² An additional difficulty arose in this specific case as there’s another Belgian university which English name is exactly the same. We separated the two by looking up each author on the Internet, which was also used to attribute centres to universities and universities to countries.

³³ In this way we get a ranking of universities, not of research centers.

Funding agencies like NBER, CEPR, CNRS and the local variants are NOT considered separately when they are combined with a ‘normal’ institution. If the funding agency is the only affiliation mentioned, only then they are considered as institutions.

There also exist campuses with the same name but on different locations. For example, there are several ‘U Paris’ and several ‘CUNY ‘s’. This poses a problem as far the number (Paris I, Paris XI,...) or the exact place CUNY (Baruch...) has not been specified. We solved this by a two-step procedure: first, we looked whether authors that had given such unspecified names in one article had given a fully specified name in another article. If so we replaced the unspecified by the fully specified name (if different full specification, we took most cited one, if tie, we randomly picked one). Those that could not be attributed are then, in the second step, divided proportionally over the ‘places/numbers’. Note that that some campuses have branch campuses, like PA State U. Though we do consider the branches as different, we do not distribute, in such cases, the central campus over the branches.

Finally, for authors that did not list their affiliation, we applied the first step of the above procedure.

The names of the economists have also been standardized: we listed all names alphabetically and then standardized (for example John Doe and John D. Doe all become John Doe). Of course, if a name is misspelled in Econlit (for example, John D. Ode) it is unlikely that I will have noticed it. Similarly, two people with the same name will have been considered as one individual. Note that Econlit uses full names (including initials) which reduces this problem to a large extent.

At the end of 2001, I downloaded the information from the Social Science Citation Index (SSCI). Data on the total number of cites were downloaded by journal (The Web of Science allows to download no more than 500 articles at a time). Using the journal name, the volume number and the begin page of each article, I connected each article in Econlit to the corresponding article in the SSCI. On my webpage you will find a page with for each journal the time period it is included in Econlit and in the SSCI. The following journals (mostly recently added to Econlit) have not been included: Agricultural Economics, Canadian Journal of Development Studies, Desarrollo Economico, Finance a Uver, Financial Management, Food Policy, Health Economics, Health Services Research, Housing Studies, Inquiry, Journal of African Economies, Journal of Royal Statistical Society Series A, Law and Contemporary Problems, Macroeconomic Dynamics, Nationalokonomisk Tidsskrift, New England Economic Review, Papers in Regional Science, Politicka Ekonomie, Resource and Energy Economics, Revue Canadienne des Sciences de l'Administration / Canadian Journal of Administrative Sciences, Transportation, Economic Development Quarterly, Transportation Research: Part A: Policy and Practice, Transportation Research: Part B: Methodological, Transportation Research: Part D: Transport and Environment, Environmental and Resource Economics.

A2) The biases of economics journals.

The insider bias of journals

On a webpage on “how to publish in top journals” an editor of the Review of International Economics, notes the following³⁴:

“ There are three types of journals:

- Association journals (AER, Econometrica, etc.)
- University journals, managed and edited by university faculty (QJE, JPE, etc.)
- Journals published by commercial publishers (Blackwell, North-Holland, etc.

Problems of Journals:

- Association journals: Editors change every few years, and they tend to accept more papers by colleagues and friends while they are at the helm. Since the editors are chosen among a few major institutions, they tend to get a larger share than under ideal conditions. Subsidized by associations.
- University journals: Promoting truth and knowledge is *not* necessarily the primary concern of these journals. The universities need to protect their own interests. They should set a good example by announcing that their editorial standards are not compromised to protect their own interests, but do they have the courage? Subsidized by universities.
- Commercial journals: To maximize profits they are least likely to have preferences or biases. However, they cannot survive without reader subscriptions.”

If such phenomena are important, they will bias the rankings. Laband (1985) for example, notes that ‘over 1400 pages of the 2248 reported by Graves, Marchand and Thompson for the university of Chicago were published in the three Chicago-edited journals included in their sample. By contrast, the next most-highly-ranked department, Harvard, was allocated less than 400 pages in those three journals’. McDowell and Amacher (1986) report similar results. Table A2 gives for 4 top journals, the five universities that have the biggest share in the number of pages published for the periods 1950-1959, 1960-1969 (both from Siegfried (1972)), 1985-1990 (Bairam (1994)) and 1994-1998.

[INSERT TABLE A2 HERE]

The table shows clearly signs of an overrepresentation of the own university for the JPE and the QJE. Take the Chicago based JPE, in which 9.4% of the pages is now coming from Chicago-affiliated scholars, a part that is more than two times the part of Harvard. At the same time, however, the Harvard based Quarterly Journal of Economics assigns 13.4% of its space to its own people, about two thirds more than the part Chicago gets. Note that, all by all, the ‘home-advantage’ of these top journals is quite limited, certainly when compared to some of the lower-impact journals: 62% of the affiliations mentioned in the “Hitotsubashi Journal of Economics” is from Hitotsubashi University and 54% of the pages of *Economia*, a journal affiliated to the Catholic University of Peru, has been written by their own people^{35,36}. Several reasons can be invoked to rationalize this overrepresentation. Nepotism might be one, but less

³⁴ www.ag.iastate.edu/journals/rie/how.htm

³⁵ Though no significant relationship could be found between the impact factor and a statistic reflecting possible home bias (part of second biggest publisher divided by the part of the biggest publisher).

³⁶ For a more comprehensive list see <http://homepages.ulb.ac.be/~tcoupe>.

harmful explanations do exist: Laband and Piette (1994) show that for 28 top journals, the papers of editor-affiliated scholars tend to receive more citations, and appear thus of better quality³⁷. Whatever the reason, as many universities do have their ‘own’ journal and even more universities have an editor somewhere, one might file this problem as ‘equal cheating’. Yet, the smaller the sample of journals, the bigger the bias³⁸.

The home-bias of journals

Similar ‘complaints’ have been made about the geographical distribution. Elliot et al (1998) for example, note that ‘North American economists publish more extensively in the leading European journals than do European economists in the leading US journals’.

To get some idea about this issue, we calculated for each journal, the percentage of the total number of pages that was written by universities of the 9 regions defined above. A journal is considered to be ‘of region X’ when region X has published the biggest part in that journal (relative with respect to the other regions). Out of 709 different journals included during the nineties, 314 journals could be assigned to the US and 273 to Europe. If we compare this to the number of economists, 33285 against 27016, we see that both ratios are quite close: 87% in journals against 81% in people. In the European journals, on average 73.1% of the pages is filled by European universities, while 73.5% of US journals is written by US journals, which seems to indicate that if there is a home-bias, that it plays at both sides of the ocean.

³⁷ To test whether the method of peer-review, single or double blind, played a role, we compared the statistic, part of second biggest publisher divided by the part of the biggest publisher, for a group of single blind journals and a group of double blind journals (from Blank (1991)). No difference was found as in both cases, the ratio is equal to 76%.

Next, we look at those 258 journals that are included in both the Journal Citation Reports and in Econlit during the nineties. Of these 258, 158 can be considered as US journals and 84 can be considered as European journals. If we take Econlit as representative for the economics literature, then the Journal Citation Reports seem biased, in their journal choice, against European journals and European authors. Indeed, while the part of Europe in Econlit is 38,3% against 44.3% for the US, it is 32,6 % against 61,2% in the JCR³⁹. This again might contribute to an explanation of why non-US economists and non US-universities seem unable to compete with their US colleagues!

However, looking at the impact factors reveals that European Journals have an impact factor of on average 0.53, about half of the average impact factor of the US journals (0.88). And also the number of European journals with a small impact factor (less than 0.3) is equal to the number of lowly cited US journals (25).

Until now, we supposed that citations are not affected by improper nationalism. If however, European journals tend to cite other European journals (and similarly for the US), then the lower impact factor of European journals might be a consequence of the lower number of European journals included in the JCR rather than the cause of it⁴⁰!

Hence, further research is needed to solve this problem but for now, one can not do anything but keeping in mind that correcting for quality by using citations has its own disadvantages.

³⁸ See Hodgson and Rothman (1999) for a study about the editors of thirty top journals.

³⁹ Similar results when assigning a journal to a region when more than 50% of the journal is written by authors from that region.

⁴⁰ Note that there does seem to exist a citation home bias. The NSF's Science and Engineering Indicators- 1996 (p. 5-40) for example, mentions: 'Not surprisingly, all countries cite their domestic scientific and technical literature well in excess of their respective world shares '.

One might see the above as an explanation of the lack of worldwide rankings. Note however that the same problem is likely to occur on the country-level, as witnessed by KMS (1999)'s remark that the inclusion of the Economic Journal in their rankings might 'create possible biases in favour of British authors'.

The specialization of journals

Finally, there is the difference between specialized journals and the more 'general-interest' journals. Using the JEL-codes, we can give an empirical representation of this difference Table A3 shows the top 3 JEL-codes and their respective parts in the total number of pages published by the journal^{41,42}.

[INSERT TABLE A3 HERE]

Quite clearly, these 4 top journals reveal preferences for Micro, Macro, Labor and Quantitative methods⁴³.

The problem of a representative distribution is also valid for the subjects: if we assume that Econlit represents the economic literature, does the JCR then cover a representative sample of journals? To classify the journals, we use a similar criterion as above: a journal belongs to the subfield that has the biggest share in the number of pages of that specific journal.

[INSERT TABLE A4 HERE]

⁴¹ If several JEL-codes are mentioned, the pages are assigned proportionally.

⁴² In Econlit, 9.4% of pages are Micro, 9% Labor, 8.7% Development, 8.2% Macro, and 4.9% Quantitative Methods.

⁴³ For a more comprehensive list see my webpage

As one can see from the above table, scholars specializing in Macroeconomics and Monetary Economics, Financial Economics, International Economics, Industrial Organization and finally Economic Development, Technological Change and Growth are considerably disadvantaged by the SSCI (compared to for example, scholars specializing in Micro)⁴⁴.

⁴⁴ Similar results are found when defining as specialized journals only those journals where the biggest sub-discipline has at least a part double as big as the second.

A3) Some general background statistics

The contributors to the economics literature

In the period 1969-2000, about 131000 people succeeded in contributing an article to the economics literature. Among these 131000, we find Nobel Prize winners (for example, J. Stiglitz, J. Heckman, R. Mundell, A. Sen,...) and Prime ministers (for example, of Belgium, the Czech republic, Finland, Italy and Portugal), but most of them are the John Doe's of economics.

Most of these people only published one article (or part of it, in the case of co-authorship). Table A5 gives the distribution of authors over the number of articles in this 32-year period. While the second column reflects the percentage of authors that contributed to n papers, the third column gives the percentage of authors that wrote between n and $n-1$ papers⁴⁵, with co-authored papers weighted by the number of co-authors. The fourth column shows what happens if we also weight for quality (using Bauwens' methodology and divide by 5 to get the number of top-quality equivalent articles⁴⁶)

As one can notice, the distribution reflected in Table A5 is extremely skewed. While 71983 authors only contributed to 1 article, 4052 authors contributed to 5 articles and 1230 authors contributed to 10 articles. One person, in casu Richard Cebula contributed to 238 Econlit-indexed articles. The number 2 and 3 are Joe Stiglitz with 201 articles, and Robert Tollison with 172 articles. If we weigh for coauthorship, Richard Cebula keeps the lead, Alan Greenspan becomes second, before Martin Feldstein. It gets more interesting when we weight for quality: Martin Feldstein wrote

⁴⁵ More specific, bigger than $n-1$ but smaller or equal to n .

⁴⁶ This is American Economic Review or Quarterly Journal of Economics equivalent articles. Note that we choose the Bauwens' methodology because it takes into account all Econlit-indexed publications, which is not the case for the citation-based weightings.

about 115 top-quality articles in the period 1969-2000, an average of more than three articles a year. He is followed by Joe Stiglitz and Paul Samuelson.

Column 5 and Column 6 look at the citations, column 5 at the citations of authors, column 6 at the citations of articles⁴⁷. The most cited authors are Joe Stiglitz (6935), Robert Engle (6230) and Eugene Fama (5958).

[INSERT TABLE A5 HERE]

This skewness of the production of scientific output is observed in all scientific disciplines and its stricter version is known under the name of ‘Lotka’s Law’. This law states that about 60% of the authors only publishes once and that the number of authors that publishes n papers equals the number of authors that only publish once divided by n squared. (So $a_n = a_1/n^2$). Cox and Chung (1991), using articles published in 20 top journals over a period of 26 years, report that for economics the exponent is 1.84 rather than 2⁴⁸. Sutter and Kocher (2001) find an estimate of 3 using quinquennial publications in 15 top journals.

Estimating a generalized Lotka’s law (this is, estimating c in $a_n = a_1/n^c$ through $\ln(a_n/a_1) = \alpha + c \cdot \ln(n) + \varepsilon$) gives following results:

[INSERT TABLE A6 HERE]

⁴⁷ Two difficulties arise here: first, some journals are not included in the SSCI. We therefore look only at authors and articles that could have been cited and exclude those that never have been included in the SSCI. Second, there is the ‘time-since-publication’ problem (see below).

⁴⁸ See also Chung and Cox (1990), Chung and Puelz (1992) and David (1994).

One can clearly see that Lotka's law is not really a law, our estimates of c vary from 1.75 to 3.5 and, in most cases, are significantly different from 2. Including more observations (N) decreases concentration, as does weighting for coauthorship, weighting for quality differences or taking a shorter period of time⁴⁹.

People do not only differ in their propensity to produce, they also differ with respect to the field in which they specialize. To give you some impression about the relative importance of the subfields of economics, we divided people on the basis of the JEL - codes of the articles they have written in the period 1991-2000^{50,51}. More specific, we compute for each article the distribution over the 19 subfields of economics (an article with 2 B codes, 1 C code and one D code belongs for 50% to B, for 25% to C and for 25% to D). These values are then distributed over the coauthors (if the above article has been written by 2 persons, they get each 0.25 for B and 0.125 for C and D). This procedure is then repeated for each article written by a given author and the author is assigned to the subfield in which he scores the highest⁵². We also give the results of what happens if we weigh articles by their Bauwens score (so codes of more important articles get a higher weight). Both measures give fairly similar results

Table A7 gives the resulting distributions.

[INSERT TABLE A7 HERE]

⁴⁹ One caveat here: the journals included in the two periods are not completely the same.

⁵⁰ Before 1991, JEL used another classification system.

⁵¹ The JEL codes in Econlit are not necessarily the same JEL codes as those that one can find in print. A JEL team reviews each article and assigns one or more codes to it. While the JEL team takes into account the authors JEL codes, its choice often differs.

⁵² In case of a tie, the computer picked randomly one of the most mentioned fields.

About 10 % of the economists can be considered as specializing in Finance. Hence, money not only talks but also writes... Other big groups are Labor, Agriculture IO, Development, Microeconomics and International Economics. Less popular are Methodology, Economic History, Law and Economics and research about the Teaching of Economics. Note that this distribution has its importance because it can influence the citations of the journals: if there is a bias to cite articles published in the top-journals of ones' sub-field, a journal specializing in finance is likely to get more citations than one in economic history simply because more people are interested in finance which brings with it a higher number of journals and hence more 'sources' for citations! Hence, the high number of citations for the Journal of Finance and the Journal of Financial Economics (which are the only specialized journals that get 5 points in the Bauwens ranking) is not that surprising. Thus weighted rankings might favor authors specializing in one of the big disciplines. A counterbalancing factor, however, is that those smaller sub-disciplines are often linked to another major discipline, for example, Law in Law and Economics.

Next, we assigned the economists to the university that they mentioned most in their most recent year of publication (using the period 1990-2000)⁵³. This allows us to divide people according to the kind of institution they are affiliated to, a 'University' (any educational institution) or an 'Other' kind of institution (pure research institution, government agency, firm and others)⁵⁴. Of the 82792 people for which we have this information, 62496 (75.3%) are affiliated to the former and 20476 (24.7%) to the latter. Monetary and Macro, International Economics, Public Economics, Health economics, Economics and Law, Economic Development, IO, Economic

⁵³ In case of a tie, the computer picked randomly one of the most mentioned institutions.

systems and Agricultural economics are relatively more popular in the non-academic sector, while academics are keener on General Economics and Teaching, Methodology, Microeconomics, Mathematical Methods, Business Administration, Economic History and Regional Economics.

Using the geographical location of the institution to which they were affiliated according to their most recent year of publications, it also becomes possible to get an idea of the geographical distribution of the economics profession⁵⁵. A first table (table A 8) shows the distribution over 9 large geographical areas⁵⁶. The second table (table A 9) gives the country top 25, where US States are considered as separate entities.

[INSERT TABLE A8 HERE]

The 83000 economists for whom we have information about their affiliation were employed by about 10800 different institutions. About 40% of these research-economists are employed by institutions located in the US, about 32.6% by European institutions. Despite this difference in the number of research active economists, the number of institutions is nearly equal!

[INSERT TABLE A9 HERE]

⁵⁴ In some cases, this division was difficult to make but we are confident that, all in all, the grouping is reasonably accurate.

⁵⁵ Which could be of interest for the organizers of conferences when they want to choose the transportation-cost minimizing conference-location (see Siegfried and Nelson (1979)).

⁵⁶ I included Turkey in Europe, but Israel in the Middle East.

The UK is the country where, by far, most economists as well as most ‘economics institutions’ are located, which helps to explain the finding of KMS (1999) that ‘British institutions have published about 2.4 times more total AER standardized pages than the next leading country, France’. Then follows a mix of mainly European countries and US states⁵⁷.

The last column of the above table gives a Herfindahl-index, which indicates the degree of concentration within each country of the institutions’ size (based on latest affiliation). Note that the US states tend to be more concentrated, which is consistent with US states having some ‘extra-large’ universities and European countries’ institutions tending to be of more equal size. Compare for example, Massachusetts and the Netherlands or France and California: while they have about the same number of institutions, the US state has a Herfindahl almost double the Herfindahl of the European country. Note that this lack of big universities can be one of the explanations for the lack of European superstar universities (see *infra*).

Some Cite Seeing in the Land of the Econ

For 167728 articles that have been written between 1975 and 2000, and that have been indexed by both Econlit and the Web of Science, we also have the number of citations since the date of publication until the end of 2001(hence truncated!). In table A10, we look at the top of the distribution and give the top 20 articles.

[INSERT TABLE A10 HERE]

⁵⁷ Controlling for the effect of differences in the number of institutions as in Hirschberg et al (2001) gives similar results.

The most cited article is Halbert White (1980), 'A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity', *Econometrica* 48, p. 817-838. It's followed by Daniel Kahneman and Amos Tversky (1979): 'Prospect Theory: An Analysis of Decision under Risk'. *Econometrica*, 47, p. 263-91. And Robert Engle and Clive Granger, 'Cointegration and Error Correction: Representation, Estimation, and Testing.' *Econometrica*, 55, p. 251-276.

Striking in this top 20 is the dominance of *Econometrica* and of the 'statistical' or 'econometric' articles. This suggests that the best way to obtain a lot of cites is to invent a statistical method. Of course, it also indicates that different sub-fields of economics are likely to have different propensities to cite or to be cited, which will have its impact on rankings of economists and economics departments. Finally, it's not surprising that mainly articles written at the end of the 70ies, beginning 80ies dominate the top 20, as 'older' articles have had more time to be cited. This too will haunt our rankings.

Most articles are much less cited than the above 20. In the next table, we take a look at the other side of the distribution.

[INSERT TABLE A11 HERE]

Table A11 gives the numbers and the percentages of papers included in Econlit and the Web of Science that are at least cited once, that are cited more than 10 times and that are cited more than 50 times.

It's comforting to see that a big majority, say 70% to 80% of articles is cited at least once⁵⁸. However, only about 20% got ten or more citations and less than 5% of all articles got 50 or more citations.

It might be surprising that the percentage of articles that have been cited at least once increased over time. This finding, however, can be caused by several factors: a first possibility is the increase in journals covered by the Institute of Scientific Information combined with a higher probability of being cited for younger works. The changing composition of Econlit over time can be a second factor.

⁵⁸ Of course, self-citations are included.

A4) The influence of the methodology on the rankings (using the period 1990-2000).

We have 14 different rankings of economics departments and 14 different rankings of economists. As one could expect, different methodologies give quite different results. To get an idea of the degree of these differences, we took those 5282 people and those 697 institutions that scored points in each ranking and then calculated the rankcorrelation⁵⁹.

[INSERT TABLE A12 and A13 HERE]

A first observation is that the correlations of the rankings tend to be bigger for the institutions than for the persons. In other words, a ranking of economic departments is more robust than a ranking of economists, which is not surprising given that the production of the average department is much bigger than the production of the average economist.

Using 10 top journals: a replication of KMS (1999)

One reason to use the KMS (1999) methodology is that these authors multiplied the number of pages directly with the LP weights, which give the number of citations per character. As LP explicitly corrected for differences in the number of characters per page of the different journals, it is conceptually incorrect not to apply this normalization to the pages before using the index. Note that for example, Dusansky

⁵⁹ Taking only those that scored on all methodologies implies that we only take the bigger producers.

and Vernon (1998-DV from here) indeed make this normalization for their ranking of American departments.

Table A14 compares the weights used by KMS (1999) (LP-index), the correct weights (this is, LP index multiplied by LPs normalization for character-per-page-differences) and DV weights (this is, LP index multiplied by DV normalization for character-per-page-differences)

[INSERT TABLE A14 HERE]

As one can notice, the three weights differ considerably as the consequence of different ways to correct for character-per page differences. Note that the page correction used by HABM (1984) again deviates from these three...

If one compares column two and four, one can notice the considerable relative differences between these and hence, suspect that the rankings will depend on which one is used. Though there are some changes, overall there are surprisingly little substantial moves. The rankcorrelation for both economic departments and economists is 0.99, so if one weighting method shows you are a topper, the other will do so too.

This seems to indicate that more important than the specific weighting method, it is the number of journals that is important. The top 10 journals were weighted by the LP adjusted index. Using the same index but now for 71 journals, leads to a ranking that has a correlation of around 0.9 with the former. One reason for this high correlation is

that many of the journals added get a very small weight relatively to those already included in the top 10. Still, despite the 0.9 rankcorrelation, for individual economists and departments it can be important which one is used: Raghuram Rajan ranks 69th on the former but 14th on the latter or Duke University, ranking 25th on the latter but 15nd on the former.

The LP adjusted index adjusts the unadjusted index for differences in the sources of citations. The rankcorrelation between this adjusted index and the 'raw' index is also close to 0.9. A slightly higher figure is found when computing the correlation between the L-P indexes based on articles and based on pages (note that also the number of journals is different between these two indexes). When comparing a ranking based on the adjusted pages index with a ranking based on the unadjusted articles index (or vice versa), we find slightly lower correlation. To give again a more concrete example of what this means: Roland Benabou 15th on adjusted pages but 245th on unadjusted articles.

The rankings based on all the journals (#pages, #articles and Bauwens) are mutually highly correlated but have relatively low rankcorrelations with the methodologies that use fewer journals, for example, the rankcorrelation between the total page count and the KMS is only 0.4 for the ranking of the economists and 0.67 for the ranking of the departments.

The three different citation measures are strongly correlated. Not surprisingly, they are less correlated with the unweighted page and article counts.

Important to remember from the above is that when judging a university one should keep in mind that changing the methodology might change the impression one gets. One last example to illustrate this point: compare the Bauwens methodology (which counts articles in all journals and used in Belgium) and the corrected ranking according to KMS (1999) (which uses pages and only top ten journals and published by the EER). Though the rankcorrelation gives 0.7 for universities, it does make a big difference for individual universities: Erasmus University Rotterdam ranks on the 123th place on the latter but 47th on the former. Or the University of Waterloo ranks 149th on Bauwens but 88th on KMS. Even the top 10 is affected, Berkeley is 2nd on Bauwens, 9th on KMS and Northwestern goes from 9th to 4th.

Hence, the conclusion of DV (1998) that ‘these high correlations suggest that ranking systems based upon publications, . . . , will present consistent findings’ seems to us a bit too optimistic for rankings of institutions but certainly for the rankings of scholars.

A5) The age and education of the top economists⁶⁰

We also collected some bibliographic information on the more productive economists. Using the internet, we tried to find the year of birth and the year of receipt of PHD, the university where they did their undergraduate studies (BA) and where they did their PHD⁶¹.

[INSERT TABLE A15 HERE]

It is sometimes claimed that rankings are biased in favor of people that are young as productivity seem to decrease over age (see for example, Oster and Hamermesh (1998)). Still, the median economist of our sample was about 41 years old in 1994 (the beginning of our sample-period) and had received his PHD 10 years earlier. In the top 100, the ‘most experienced’ economist had received his PHD in 1957 (Zvi Griliches), while the least experienced had received his PHD in 1994 (Steve Levitt).

[INSERT TABLE A16 HERE]

The most ‘spectacular’ result of the vita’s is the enormous predominance of MIT in the production of top-publishers: out of the 89 economists for which we have info on the university where they did their PHD, 23 (25%) received the PHD from MIT. MIT almost doubles Harvard (12) and is further followed by Princeton (8), Berkeley (7)

⁶⁰ This section is based on the top economists of the period 1994-1998

⁶¹ In general, US economics departments have more comprehensive websites than do non-US departments which can induce some bias.

and Chicago (7)⁶². Note further the enormous concentration of the PHD-production: only 21 universities have a PHD-graduate in the top 100, while 48 universities have a BA-graduate. Similarly, while the top 5 producers of BA's educated 28% of the top 100 economists, the top 5 of PHD-producers educated 64% of the latter!

[INSERT TABLE A17 HERE]

Next, we look at the distribution over different regions. Most remarkable here is the brain drain to the US. While 56.7% of the top 100 economists did their BA inside the US, 87.6 of these did their PHD in the US and 88.4% work there. Note further that the European PHD's are all from UK universities, while European BA come from UK (8 of which 3 Cambridge and 2 Oxford), Italy (6 of which 3 of Bocconi), France (2) and Spain(1).

[INSERT TABLE A18 HERE]

The dominance of MIT is confirmed for the top 300: out of the 243 economists for which we have info on the university where they did their PHD, 48 (20%) received the PHD from MIT. MIT is now followed by Harvard (30), Chicago (19), Princeton (16) and Stanford. Note again the enormous concentration of the PHD-production: only 50 universities have a PHD-graduate in the top 300, while 110 universities have a BA-graduate. Similarly, while the top 5 producers of BA's educated 22% of the top 300 economists, the top 5 of PHD-producers educated 52 % of the latter!

⁶² Note that this is not a consequence of differences in the size of the graduating classes. Webcaspar data show that the average number of earned PHD degrees in economics is 24 for MIT, 28 for Harvard,

[INSERT TABLE A19 HERE]

While 54.7% of the top 100 economists did their BA inside the US, 84.7 of these did their PHD in the US and 78.4% work there. Note further that the European PHD's are mainly from UK universities (22 out of 32, 8 LSE, 6 Cambridge and 5 Oxford).

14 Princeton, 30 for Berkeley and 23 for Chicago.

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Table 1: an overview of the 14 methodologies

A) Publications

1) Article count

- count of the number of articles.
- all journals included in Econlit.

2) Page count

- count of the number of pages.
- all journals included in Econlit.

3) Bauwens

- article count weighted for quality
- Quality weights between 1 and 5 (based on the product of the impact factor and the number of cites received by a journal in a given year)
- All journals included in Econlit.

4) Impact

- article count weighted for quality by impact factor
- average of impact-factor between 1994 and 2000
- citations in year T to the articles published in journal Y in T-1 and T-2 divided by the number of articles published in T-1 and T-2.
- 273 journals included.

5) Laband Piette articles

- article count weighted for quality by Laband-Piette articles index
- Laband Piette index is 'long term' impact factor (5 years)
- 121 journals

6) Laband Piette articles adjusted

- article count weighted for quality by adjusted Laband-Piette articles index
- Laband Piette index is 'long term' impact factor (5 years) that gives higher weight to citations from better journals
- 121 journals

7) Laband Piette pages

- pages count weighted for quality by Laband-Piette pages index
- Laband Piette index is 'long term' impact factor (5 years)
- 71 journals

8) Laband Piette pages adjusted

- pages count weighted for quality by adjusted Laband-Piette index
- Laband Piette index is 'long term' impact factor (5 years) that gives higher weight to citations from better journals
- 71 journals

9) Kalaitzidakis, Mamuneas and Stengos

- pages count weighted for quality by adjusted Laband-Piette index
- 10 journals

10) Hirsch, Austin, Brooks and Moore

- pages count weighted for differences in page-size
- 24 journals

11) Scott and Mitias

- pages count weighted for differences in page-size
- 24 journals

B) Citations

12) Citation count weighted for coauthorship

13) Time Adjusted Citation count, weighted for coauthorship

- citations divided by the number of years since publication.

14) Citation count

Table 2: The ranking of universities based on publication output

	Institution	Kms	LPpaga	Impact	Habm	Min	Max
1	U Harvard	1	1	1	1	1	1
2	U Chicago	2	2	2	2	2	5
3	U PA	7	6	5	4	3	7
4	U Stanford	5	4	3	6	3	6
5	MIT	3	3	6	3	3	8
6	U CA Berkeley	9	8	4	9	2	9
7	Northwestern U	4	5	9	5	4	14
8	U Yale	8	9	7	11	7	11
9	U MI Ann Arbor	13	11	8	10	5	13
10	Columbia U	10	10	10	14	7	14
11	Princeton U	6	7	11	8	6	21
12	UCLA	11	13	12	7	7	14
13	NYU	12	12	13	12	12	14
14	Cornell U	23	16	14	13	13	23
15	London school of Econ	19	23	16	16	9	23
16	U WI Madison	21	21	15	17	15	21
17	Duke U	25	15	17	15	14	28
18	OH State U	30	18	22	19	17	30
19	U MD College Park	26	24	18	26	17	29
20	U Rochester	14	14	26	18	13	45
21	U TX Austin	22	19	21	23	18	32
22	U MN Twin Cities	24	27	20	25	20	31
23	U IL Urbana Champaign	46	31	24	24	19	46
24	U CA Davis	27	30	25	22	19	30
25	U Toronto	17	22	30	27	17	30
26	U Oxford	31	39	19	28	10	39
27	U British Columbia	34	29	29	29	21	34
28	U CA San Diego	15	17	32	21	15	56
29	U Southern CA	45	26	27	34	25	45
30	Boston U	16	20	35	30	16	46
31	PA State U	40	34	28	39	25	40
32	Carnegie Mellon U	20	25	39	20	20	53
33	U Cambridge	50	55	23	44	15	55
34	U FL	42	33	40	35	28	46
35	MI State U	54	42	38	31	30	54
36	Rutgers U NJ	53	48	31	40	23	53
37	U WA	48	37	36	33	32	48
38	U NC Chapel Hill	52	40	33	32	30	52
39	TX A&M U	43	44	44	37	29	44
40	IN U, Bloomington	51	41	34	47	33	51
41	U IA	32	32	42	41	32	73
42	U Tel Aviv	18	28	49	36	18	81
43	U VA	35	38	37	42	35	85
44	U College London	36	52	48	38	36	64
45	Hebrew U	38	49	45	49	38	58
46	Brown U	29	35	52	43	29	97
47	U Tilburg	63	56	55	64	41	64
48	U Pittsburgh	28	36	58	48	28	82
49	U Warwick	74	83	46	45	34	83
50	U AZ	70	62	50	56	45	70
51	U Western Ontario	33	43	66	46	33	88

52	Johns Hopkins U	44	54	53	50	44	68
53	Australian National U	73	84	41	75	15	94
54	Vanderbilt U	60	46	56	61	46	86
55	Queens U, Canada	47	53	72	55	47	76
56	Washington U, MO	57	50	57	54	48	95
57	U Montreal	37	47	80	58	37	90
58	Georgetown U, DC	75	68	43	62	43	75
59	U CO Boulder	78	71	54	67	52	78
60	U GA	193	73	47	51	38	193
61	VA Polytechnic Institute & State U	87	64	73	57	57	92
62	Purdue U in	146	58	71	66	48	146
63	U CA Irvine	68	63	61	69	61	105
64	Boston College	69	45	75	63	43	128
65	IA State U	135	89	63	79	46	135
66	U Amsterdam	90	82	65	104	51	104
67	NC State U	85	72	74	65	47	116
68	Erasmus U Rotterdam	123	90	60	109	39	123
69	Dartmouth College	65	59	64	53	50	144
70	Catholic U Louvain	59	70	97	93	55	100
71	U York, UK	107	118	51	77	50	118
72	AZ State U	108	60	67	72	49	124
73	U Toulouse I	41	51	100	70	41	117
74	U Essex	71	80	81	52	52	123
75	U Stockholm	49	61	85	95	49	115
76	U CA Santa Barbara	56	69	94	74	56	117
77	London Business School	110	76	82	73	69	110
78	FL State U	152	103	86	60	60	152
79	U New S Wales	131	106	93	101	40	131
80	U Alberta	128	93	91	94	74	128
81	McMaster U	72	81	84	88	72	119
82	U Houston	66	75	95	76	66	148
83	Syracuse U, NY	148	101	88	68	66	148
84	U Autònoma Barcelona	61	66	126	91	61	126
85	U Nottingham	155	165	70	86	48	165
86	Hong Kong U of Science & Tech	89	67	106	78	67	171
87	U Bonn	62	74	136	120	62	136
88	York U Canada	100	97	101	139	88	139
89	CA Institute of Technology	39	57	105	59	39	236
90	LA State U	276	109	87	83	72	276
91	U Southampton	67	88	90	99	67	149
92	U CT	255	162	69	100	57	255
93	GA State U	97	91	121	71	71	135
94	U KY	147	119	96	92	83	147
95	George Washington U, DC	160	127	78	105	78	160
96	INSEE	55	65	155	96	55	159
97	Southern Methodist U	126	77	120	84	68	173
98	U Notre Dame IN	144	87	108	118	78	144
99	Stockholm School of Econ	82	96	83	153	82	153
100	Simon Fraser U CN	92	94	114	124	92	133
101	U OR	94	78	124	85	75	204
102	George Mason U, VA	265	161	92	110	64	265
103	Birkbeck College, U London	79	112	110	87	79	153
104	Free U Amsterdam	134	133	89	133	83	148

105	U MA Amherst	140	142	77	157	77	165
106	U SC	129	115	122	80	80	146
107	U Paris I	96	102	170	165	26	176
108	U Bristol	109	137	76	114	76	141
109	U Melbourne	162	164	102	163	30	170
110	U IL Chicago	154	120	98	106	92	154
111	U Copenhagen	103	100	123	173	93	173
112	McGill U	122	111	115	126	98	131
113	U Groningen	137	151	118	115	77	156
114	Chinese U Hong Kong	105	98	153	116	98	153
115	Free U Brussels ULB	64	86	139	107	64	164
116	U Newcastle upon Tyne	164	214	59	89	55	217
117	Tulane U	149	95	113	108	89	194
118	American U, Washington, DC	136	154	104	142	104	154
119	U Mannheim	130	126	142	177	72	177
120	Auburn U	219	171	144	97	71	219
121	U Pompeu Fabra	58	79	161	90	58	206
122	SUNY Buffalo	111	116	112	121	107	194
123	U Manchester	207	218	68	170	54	218
124	U CA Santa Cruz	81	99	143	98	81	217
125	Monash U, Australia	153	160	128	186	61	186
126	Rice U, Houston, TX	86	85	140	82	82	260
127	U TN Knoxville	178	181	129	81	81	181
128	Emory U	167	121	107	113	91	202
129	U National Singapore	150	136	116	207	63	207
130	U Laval	133	135	169	132	116	172
131	U Carlos III Madrid	102	104	180	134	97	180
132	U Waterloo, Waterloo, Ontario	88	114	152	136	88	160
133	Wayne state U, MI	174	147	134	103	102	174
134	U WI Milwaukee	274	187	119	112	92	274
135	U MO Columbia	211	123	148	169	104	211
136	U CA Riverside	124	124	149	138	95	181
137	U AL	113	134	150	141	113	169
138	U Quebec Montreal	99	132	178	144	99	178
139	SUNY Albany	121	128	137	152	117	200
140	U Oslo	151	152	109	185	109	192
141	U Miami, FL	117	138	135	131	108	190
142	U Maastricht	218	149	130	281	75	281
143	U DE	171	172	145	102	102	207
144	U Sydney	222	173	125	221	60	222
145	EHESS	76	110	187	150	76	205
146	U Vienna	80	105	186	200	80	200
147	U Munchen	176	169	159	171	122	176
148	U E Anglia	125	179	111	162	111	216
149	U Geneva	119	146	191	161	119	191
150	INSEAD	120	108	133	199	108	222
151	Clemson U	158	129	171	128	109	255
152	U Birmingham	197	232	117	148	107	232
153	U Guelph	166	159	162	178	133	182
154	Hitotsubashi U	106	150	216	222	79	236
155	Tufts U	170	153	158	122	103	229
156	Brigham Young U	101	107	181	117	101	304
157	U Tokyo	116	143	185	211	116	211

158	City U London	199	198	151	175	146	199
159	U Zurich	93	139	176	204	93	204
160	SUNY Stony Brook	84	92	164	156	84	345
161	Carleton U, Ottawa	186	178	173	181	154	205
162	U Reading	238	264	99	189	87	264
163	Academia Sinica	172	184	220	167	128	220
164	Catholic U Leuven	268	207	138	266	62	268
165	Bar Ilan U	320	219	160	146	127	320
166	European U Institute, Firenze	118	130	188	188	118	247
167	U Bocconi	115	157	215	176	101	240
168	U UT	173	113	182	166	113	294
169	Brandeis U	83	117	177	130	83	345
170	IN U Purdue U, Indianapolis	95	122	228	125	95	266
171	U Exeter	192	182	167	158	147	225
172	U Bologna	163	175	267	197	89	267
173	U WY	142	144	192	119	119	286
174	U NE Lincoln	236	195	165	223	132	236
175	WV U	249	228	183	123	123	249
176	U KS	220	167	179	180	124	230
177	Norwegian School Econ & Business Admin.	185	174	163	288	143	288
178	Temple U	387	210	146	149	127	387
179	U Glasgow	278	311	103	140	103	311
180	Southern IL U Carbondale	273	197	203	160	153	273
181	KS State U	269	212	175	192	115	269
182	CUNY Baruch College	299	145	166	147	122	299
183	U OK	283	158	210	145	142	283
184	College of William & Mary,	182	148	209	129	129	313
185	U Strathclyde	264	315	127	184	112	315
186	U Edinburgh	272	234	141	196	141	272
187	U Hong Kong	190	200	207	155	155	214
188	Washington State U	403	202	147	201	110	403
189	Uppsala U, Sweden	233	226	172	206	163	233
190	Osaka U	168	205	275	187	126	275
191	U Tsukuba, Japan	104	140	255	159	104	275
192	U NM	184	235	174	143	143	247
193	U College Dublin	114	163	217	137	114	271
194	U CO Denver	188	190	221	195	178	263
195	U Rome "La Sapienza"	200	236	308	385	43	385
196	Concordia U	169	180	231	243	169	253
197	Santa Clara U, CA	258	141	195	182	138	349
198	Queen Mary & Westfield College	241	262	168	183	168	262
199	MT State U	143	176	233	111	111	371
200	U RI	223	193	218	256	162	271

Kms: 10 top journals of Kalaitzidakis et al. Lppaga: Laband-Piette adjusted page count. Impact: article count weighted by impact factor. Habm: 24 journals of Hirsch et al. Min: minimum over 11 methodologies. Max: maximum over 11 methodologies.

Table 3: number of US and European universities in the publications top 100 by methodology and period.

	Europe			US		
	1990-2000	1990-1994	1996-2000	1990-2000	1990-1994	1996-2000
Articles	25	19	31	57	62	51
Bauwens	23	19	32	62	64	53
Impact	24	18	29	65	71	58
LParticles	16	11	22	71	77	65
Lparticlesadj	20	13	25	67	74	63
Pages	28	23	33	55	59	49
LPpag	18	11	21	69	78	67
LPpaga	21	14	27	65	72	60
KMS	25	22	28	60	62	56
HABM	19	12	22	70	78	66
SM	17	13	22	71	77	65

Articles: article count. Bauwens: article count weighted by Bauwens' weights. Impact: article count weighted by impact factor. LParticles: Laband –Piette article count. LParticlesadj: Laband –Piette adjusted article count. Pages: page count. LPpag: Laband –Piette page count. LPpagadj: Laband –Piette adjusted page count. KMS: 10 journals of Kalaitzidakis et al. HABM: 24 journals of Hirsch et al. SM: 36 journals of Scott and Mitias.

Table 4: the ranking of departments on the basis of citations.

	Institution	Rank		#		
		citescoauyw	Cites	citescoau	citescoauyw	cites
1	U Harvard	1	1	16293	2626	25004
2	U Chicago	2	2	13509	2035	18757
3	U CA Berkeley	6	5	8992	1328	12877
4	U Stanford	3	4	8929	1385	13369
5	U PA	5	3	8800	1346	13565
6	MIT	4	6	8703	1361	12794
7	U Yale	7	8	8331	1193	10982
8	U MI Ann Arbor	8	9	6956	1038	9987
9	Northwestern U	9	7	6943	999	11249
10	Princeton U	10	10	6627	966	9939
11	UCLA	12	12	5303	816	7721
12	Columbia U	11	11	5229	849	7723
13	NYU	13	13	4482	715	7138
14	U WI Madison	14	15	4470	688	6443
15	U Rochester	17	14	4454	599	6827
16	London school of Econ	16	17	4065	640	6120
17	Cornell U	15	16	4044	644	6313
18	Duke U	18	20	3844	593	5551
19	U MD College Park	20	18	3554	566	5624
20	U CA San Diego	21	21	3550	537	5370
21	U Oxford	19	23	3201	568	4648
22	OH State U	23	22	3116	478	4840
23	U IL Urbana Champaign	25	24	3043	454	4548
24	U MN Twin Cities	26	18	3017	448	5624
25	U Copenhagen	38	42	2727	315	2852
26	Carnegie Mellon U	28	25	2711	415	4126
27	U CA Davis	27	29	2677	429	3692
28	U TX Austin	24	27	2665	460	3975
29	U Cambridge	22	31	2567	484	3589
30	Boston U	31	28	2487	369	3766
31	U British Columbia	29	30	2398	379	3671
32	U Southern CA	30	32	2389	378	3581
33	U Toronto	36	40	2251	330	3006
34	U WA	35	34	2239	336	3366
35	MI State U	33	33	2230	351	3456
36	U NC Chapel Hill	34	35	2108	348	3321
37	PA State U	32	36	2096	360	3280
38	IN U, Bloomington	37	38	2023	323	3089
39	U FL	40	39	1941	299	3056
40	TX A&M U	43	37	1929	280	3114
41	Brown U	41	41	1890	295	2878
42	U Tel Aviv	44	26	1876	272	4007
43	Rutgers U NJ	42	47	1808	295	2510
44	U IA	46	44	1791	268	2767
45	U VA	39	46	1791	304	2534
46	U CO Boulder	50	48	1696	254	2497
47	U AZ	48	43	1665	258	2829
48	Washington U, MO	47	49	1635	262	2311
49	Australian National U	51	50	1518	253	2298
50	U Warwick	52	56	1473	243	1966

51	U College London	45	45	1460	270	2700
52	Vanderbilt U	53	51	1414	234	2264
53	NC State U	64	53	1399	185	2218
54	U GA	59	52	1374	203	2249
55	U Sussex	49	65	1366	257	1752
56	IA State U	54	55	1318	218	2094
57	Johns Hopkins U	56	59	1306	205	1925
58	U Pittsburgh	60	54	1236	200	2207
59	Queens U, Canada	69	62	1235	181	1844
60	U CA Irvine	61	58	1225	194	1945
61	U Stockholm	55	67	1219	209	1662
62	Hebrew U	57	57	1217	203	1958
63	U MA Amherst	68	72	1179	182	1593
64	U Newcastle upon Tyne	62	75	1177	191	1546
65	Boston College	63	59	1133	187	1925
66	Georgetown U, DC	71	71	1115	180	1607
67	U Western Ontario	75	63	1091	159	1808
68	U Montreal	74	66	1084	171	1750
69	U Tilburg	58	64	1082	203	1788
70	Syracuse U, NY	67	77	1066	183	1522
71	U CT	80	70	1055	148	1610
72	Erasmus U Rotterdam	72	61	1047	174	1850
73	AZ State U	78	69	1004	152	1641
74	Dartmouth College	65	76	990	184	1532
75	Purdue U in	77	68	987	154	1649
76	U Manchester	70	90	979	181	1268
77	U Amsterdam	66	74	977	184	1550
78	FL State U	79	78	947	149	1474
79	U York, UK	76	88	940	158	1342
80	U IL Chicago	85	80	928	141	1462
81	LA State U	91	73	910	128	1570
82	U CA Santa Barbara	82	93	903	145	1212
83	U SC	98	81	883	119	1452
84	U Bristol	89	96	879	135	1177
85	VA Polytechnic Institute & State U	90	82	877	133	1446
86	London Business School	84	85	837	143	1397
87	Simon Fraser U CN	102	83	835	113	1439
88	U Houston	92	84	822	127	1406
89	U CA Santa Cruz	87	91	819	137	1220
90	McMaster U	103	95	809	112	1182
91	CA Institute of Technology	83	87	793	145	1357
92	U Nottingham	81	104	747	146	1031
93	George Mason U, VA	109	108	742	106	954
94	U Wales Cardiff	73	110	736	172	924
95	U Alberta	101	94	732	113	1187
96	Rice U, Houston, TX	114	92	707	102	1220
97	U E Anglia	88	116	704	136	895
98	GA State U	100	98	698	115	1101
99	SUNY Stony Brook	120	103	693	96	1058
100	U Southampton	96	107	692	120	1009
101	SUNY Buffalo	124	105	692	92	1022
102	Southern Methodist U	118	97	689	100	1166
103	Birkbeck College	111	100	678	103	1075

104	Catholic U Louvain	97	79	673	119	1465
105	U Strathclyde	107	124	669	106	852
106	U New S Wales	95	106	663	121	1012
107	U WI Milwaukee	123	118	663	92	881
108	U OR	106	101	660	110	1063
109	U Lancaster	104	136	655	112	787
110	U Essex	94	102	647	121	1059
111	U Toulouse I	86	86	641	137	1364
112	Free U Amsterdam	93	119	637	126	875
113	U Miami, FL	137	122	635	82	863
114	U Reading	105	133	633	111	823
115	U KY	117	125	630	102	847
116	Tulane U	119	111	627	99	921
117	U Notre Dame IN	113	141	599	103	747
118	Monash U, Australia	135	143	583	84	728
119	U Groningen	116	147	574	102	698
120	York U Canada	126	130	573	91	831
121	Stockholm School of Econ	99	109	569	116	940
122	U Autonoma Barcelona	130	120	557	89	873
123	Emory U	122	113	555	94	913
124	Free U Brussels ULB	110	99	543	104	1091
125	INSEAD	121	112	535	95	918
126	Catholic U Leuven	115	121	530	102	865
127	U DE	142	127	530	78	843
128	U National Singapore	108	137	527	106	768
129	U TN Knoxville	148	138	523	74	755
130	American U, Washington, DC	141	135	517	79	802
131	SUNY Albany	158	159	509	68	638
132	Southern IL U Carbondale	154	131	506	71	825
133	U Maastricht	131	134	506	89	817
134	George Washington U, DC	112	149	506	103	693
135	Auburn U	152	126	499	72	844
136	U AL	143	114	499	78	911
137	INSEE	125	115	495	92	897
138	U UT	155	129	485	70	832
139	U TX Dallas	159	139	484	67	754
140	European U Institute	149	132	480	73	824
141	U Bonn	132	158	480	89	646
142	McGill U	140	140	478	79	750
143	U MO Columbia	136	150	478	82	692
144	Temple U	166	145	469	65	721
145	U Munchen	128	172	463	90	581
146	U Waterloo	139	142	461	80	736
147	Brigham Young U	161	153	460	67	679
148	U Glasgow	133	179	459	88	552
149	Wayne state U, MI	151	165	455	72	593
150	U Guelph	156	155	453	70	658
151	Clemson U	180	151	446	59	689
152	U Zurich	127	178	442	91	558
153	U Kiel	178	180	435	60	551
154	U Mannheim	138	171	427	81	583
155	U Oslo	144	163	426	78	598
156	KS State U	150	167	424	72	589

157	CUNY Baruch College	170	156	422	63	647
158	Brandeis U	153	144	420	71	726
159	Uppsala U, Sweden	134	183	420	87	534
160	Clark U	187	170	413	56	584
161	WV U	157	162	410	68	607
162	Hong Kong U of Science & Tech	129	123	404	90	856
163	City U London	177	154	400	60	671
164	EHESS	164	89	397	66	1336
165	Carleton U, Ottawa	181	187	393	58	519
166	U Melbourne	146	185	385	75	523
167	U Hawaii	189	177	382	55	565
168	Hitotsubashi U	196	163	376	53	598
169	U Aarhus	171	157	376	62	647
170	U Wales Swansea	184	168	376	57	589
171	U NE, Lincoln	182	173	374	57	572
172	U Quebec Montreal	167	190	374	64	515
173	Washington State U	169	161	372	63	626
174	U Liverpool	163	184	371	66	530
175	U Vienna	172	166	367	62	591
176	Santa Clara U, CA	173	195	361	61	494
177	SUNY Binghamton	176	193	361	60	496
178	Tufts U	183	176	359	57	566
179	Marquette U	225	198	357	44	483
180	U CA Riverside	188	169	351	55	585
181	U Pompeu Fabra	145	146	350	75	718
182	OR State U	175	174	348	60	571
183	U Leeds	162	201	347	67	474
184	U Birmingham	147	188	343	74	518
185	GA Institute Technology	192	148	334	54	695
186	Norwegian School Econ & Business Adm.	186	219	332	56	426
187	Bar Ilan U	215	193	331	47	496
188	U Bocconi	190	152	331	55	685
189	U Exeter	165	199	330	65	476
190	U Edinburgh	168	182	324	63	536
191	Kyoto U	211	181	324	48	545
192	Williams College	209	204	313	49	463
193	U WY	200	195	312	50	494
194	U Western Australia	179	214	309	59	437
195	U OK	193	186	305	53	520
196	U NM	214	207	305	48	452
197	Fordham U, NY	174	205	303	60	459
198	U Heriot Watt	195	202	303	53	470
199	U North TX	213	206	299	48	453
200	Miami U, Oxford, OH	245	210	295	40	444

Citescoau: citation count weighted for co-authorship and multiple affiliations. Citescoauyw: citation count weighted for co-authorship, multiple affiliations and differences in years since publication. Cites: citation count.

Table 5: number of US and European universities in the cites top 100 by methodology and period.

	Europe			US		
	1990-2000	1990-1994	1996-2000	1990-2000	1990-1994	1996-2000
Citescoau	20	18	28	69	71	61
citescoauyw	25	18	29	66	71	60
Cites	21	18	29	68	71	61

Citescoau: citation count weighted for co-authorship and multiple affiliations. Citescoauyw: citation count weighted for co-authorship, multiple affiliations and differences in years since publication. Cites: citation count.

Table 6: correlation between ranking and size.

	Latest affiliation		Latest affiliation
Articles	0.96	KMS original	0.61
Bauwens	0.94	KMS	0.61
Impact	0.89	HABM	0.76
Lparticles	0.86	SM	0.79
Lparticlesadj	0.77	cites	0.82
pages	0.95	citescoau	0.83
Lppag	0.83	citescoauyw	0.85
Lppagadj	0.74		

Articles: article count. Bauwens: article count weighted by Bauwens' weights. Impact: article count weighted by impact factor. LParticles: Laband –Piette article count. LParticlesadj: Laband –Piette adjusted article count. Pages: page count. LPPag: Laband –Piette page count. LPPagadj: Laband –Piette adjusted page count. KMS: 10 journals of Kalaitzidakis et al. HABM: 24 journals of Hirsch et al. SM: 36 journals of Scott and Mitias. Citescoau: citation count weighted for co-authorship and multiple affiliations. Citescoauyw: citation count weighted for co-authorship, multiple affiliations and differences in years since publication. Cites: citation count.

Table 7: Overall ranking of departments by publication output of top scholars.

	Top 5	Top 20	Top 50
1	MIT	MIT	U Harvard
2	U Yale	U Harvard	U Chicago
3	U Harvard	U Chicago	MIT
4	U Chicago	U Yale	U PA
5	Princeton U	Princeton U	U Stanford
6	U PA	U PA	Princeton U
7	U CA Berkeley	U Stanford	U CA Berkeley
8	U Stanford	U CA Berkeley	U Yale
9	Northwestern U	Northwestern U	Northwestern U
10	Columbia U	Columbia U	Columbia U
11	U Toulouse I	UCLA	UCLA
12	UCLA	NYU	NYU
13	U TX Austin	U MI Ann Arbor	U MI Ann Arbor
14	Duke U	U CA San Diego	Cornell U
15	U CA San Diego	Duke U	U Rochester
16	NYU	U TX Austin	Duke U
17	U WI Madison	London school of Econ	London school of Econ
18	London school of Econ	U WI Madison	U WI Madison
19	U MI Ann Arbor	Cornell U	U MN Twin Cities
20	Brown U	U Rochester	U MD College Park
21	MI State U	U MD College Park	U CA San Diego
22	U MD College Park	U CA Davis	U TX Austin
23	U Rochester	U MN Twin Cities	U CA Davis
24	U CA Davis	Boston U	OH State U
25	U Cambridge	U Toronto	Boston U
26	U Oxford	OH State U	U British Columbia
27	U College London	U IL Urbana Champaign	U IL Urbana Champaign
28	U IA	Brown U	U Toronto
29	U Montreal	U British Columbia	U Oxford
30	OH State U	U Oxford	U Tel Aviv
31	U IL Urbana Champaign	U Tel Aviv	Carnegie Mellon U
32	U Toronto	MI State U	U Southern CA
33	U FL	U FL	MI State U
34	Cornell U	Carnegie Mellon U	U FL
35	U Stockholm	U Cambridge	PA State U
36	U MN Twin Cities	U College London	U Cambridge
37	Carnegie Mellon U	U Southern CA	IN U, Bloomington
38	U Tel Aviv	U Toulouse I	U College London
39	U British Columbia	IN U, Bloomington	U IA
40	ENPC	U IA	Brown U
41	Johns Hopkins U	U Montreal	TX A&M U
42	U WA	TX A&M U	U WA
43	Boston U	U WA	U NC Chapel Hill
44	TX A&M U	PA State U	U VA
45	IN U, Bloomington	U NC Chapel Hill	Hebrew U
46	Boston College	U VA	Rutgers U NJ
47	Queens U, Canada	Queens U, Canada	U Tilburg
48	U NC Chapel Hill	U Tilburg	U Montreal
49	U AZ	Hebrew U	U Pittsburgh
50	U Southern CA	Vanderbilt U	U Western Ontario
51	EHESS	Johns Hopkins U	Vanderbilt U

52	Vanderbilt U	Rutgers U NJ	Queens U, Canada
53	U VA	U Pittsburgh	U Warwick
54	U CA Santa Barbara	EHESS	Washington U, MO
55	U Essex	Boston College	Johns Hopkins U
56	PA State U	U Western Ontario	U Toulouse I
57	U CA Santa Cruz	Dartmouth College	Australian National U
58	U Pittsburgh	U Essex	U AZ
59	CA Institute of Technology	U Warwick	EHESS
60	Free U Brussels ULB	U AZ	Georgetown U, DC
61	U Tilburg	U CA Irvine	Boston College
62	U Western Ontario	U CA Santa Barbara	U CO Boulder
63	Rutgers U NJ	Australian National U	Dartmouth College
64	Catholic U Louvain	Washington U, MO	U CA Irvine
65	Dartmouth College	Catholic U Louvain	U GA
66	U IL Chicago	U CO Boulder	NC State U
67	U GA	U GA	Catholic U Louvain
68	Australian National U	U Stockholm	U Essex
69	Hebrew U	NC State U	VA Polytechnic Inst. & St. U
70	AZ State U	CA Institute of Technology	U CA Santa Barbara
71	U CA Irvine	Georgetown U, DC	IA State U
72	INSEE	AZ State U	Erasmus U Rotterdam
73	ENS	IA State U	U Amsterdam
74	NC State U	FL State U	AZ State U
75	Syracuse U, NY	U Amsterdam	London Business School
76	McMaster U	U York, UK	U Stockholm
77	FL State U	Syracuse U, NY	U York, UK
78	U Autonomia Barcelona	U CA Santa Cruz	Purdue U in
79	U CO Boulder	London Business School	FL State U
80	U Amsterdam	U Autonomia Barcelona	U Autonomia Barcelona
81	U Zurich	Erasmus U Rotterdam	McMaster U
82	London Business School	Free U Brussels ULB	CA Institute of Technology
83	LA State U	VA Polytechnic Inst. & St. U	Syracuse U, NY
84	U Nottingham	U Nottingham	U Nottingham
85	U Warwick	ENPC	U New S Wales
86	Erasmus U Rotterdam	McMaster U	Hong Kong U of Science & T.
87	Washington U, MO	INSEE	INSEE
88	Brandeis U	Purdue U in	U Houston
89	U York, UK	LA State U	LA State U
90	U E Anglia	GA State U	Southern Methodist U
91	Free U Amsterdam	Birkbeck College, U London	Free U Brussels ULB
92	Birkbeck College, U London	Southern Methodist U	U Pompeu Fabra
93	IA State U	U Pompeu Fabra	U CT
94	Georgetown U, DC	U CT	U Southampton
95	U Copenhagen	U IL Chicago	GA State U
96	GA State U	U Houston	U Paris I
97	VA Polytechnic Inst. & St. U	McGill U	Stockholm School of Econ
98	Simon Fraser U CN	Simon Fraser U CN	U Alberta
99	U Marseille II	Stockholm School of Econ	McGill U
100	McGill U	U OR	Birkbeck College, U London

Table 8: ranking of economists by publications.

	names	institution	KMS	LPpqa	Impact	SM	Min	Max
1	Phillips,-Peter-C.-B.	U Yale	2	2	26	1	1	27
2	Tirole,-Jean	U Toulouse I	4	3	14	3	3	53
3	Heckman,-James-J.	U Chicago	6	4	4	7	2	68
4	Krueger,-Alan-B.	Princeton U	8	8	6	11	6	116
5	Stiglitz,-Joseph-E.	World Bank	81	42	5	44	5	81
6	Andrews,-Donald-W.-K.	U Yale	1	1	18	2	1	204
7	Viscusi,-W.-Kip	U Harvard	140	66	3	21	3	140
8	Laffont,-Jean-Jacques	U Toulouse I	42	16	55	19	8	106
9	Sen,-Amartya	U Cambridge	24	37	57	48	22	115
10	Smith,-Bruce-D.	U TX Austin	35	32	118	8	8	118
11	Campbell,-John-Y.	U Harvard	10	6	30	9	6	315
12	Feldstein,-Martin	U Harvard	56	69	15	87	15	136
13	Caballero,-Ricardo-J.	MIT	3	5	32	16	3	298
14	Poterba,-James-M.	MIT	144	51	9	76	9	144
15	Card,-David	U CA Berkeley	11	9	22	25	8	315
16	Neumark,-David	MI State U	147	59	29	5	5	178
17	Matsuyama,-Kiminori	Northwestern U	18	28	35	38	6	255
18	Gruber,-Jonathan	MIT	20	13	37	18	13	332
19	Acemoglu,-Daron	MIT	7	11	62	10	4	342
20	Borjas,-George-J.	U Harvard	84	33	17	23	11	239
21	Besley,-Timothy	LSE	21	27	59	27	16	261
22	Shleifer,-Andrei	U Harvard	364	30	13	43	8	364
23	Rosenzweig,-Mark-R.	U PA	16	17	73	12	12	415
24	Blanchard,-Olivier-Jean	MIT	118	74	27	223	27	223
25	Hansen,-Bruce-E.	U WI Madison	152	83	83	26	26	152
26	Lott,-John-R., Jr.	U Yale	380	190	28	4	4	380
27	Gali,-Jordi	U Pompeu Fabra	23	44	88	128	23	178
28	Lazear,-Edward-P.	U Stanford	27	24	50	33	24	494
29	Alesina,-Alberto	U Harvard	37	50	68	105	37	292
30	Lewbel,-Arthur	Boston College	87	71	67	80	22	369
31	Rodrik,-Dani	U Harvard	141	112	16	300	16	362
32	Horowitz,-Joel-L.	U IA	36	35	92	42	24	400
33	Diamond,-Peter-A.	MIT	60	48	46	170	32	306
34	Glaeser,-Edward-L.	U Harvard	78	82	76	60	50	289
35	Weitzman,-Martin-L.	U Harvard	29	49	25	133	25	390
36	Angrist,-Joshua-D.	MIT	14	12	75	30	12	513
37	Hamermesh,-Daniel-S.	U TX Austin	203	168	41	58	38	263
38	Barro,-Robert-J.	U Harvard	48	68	123	200	48	200
39	Stein,-Jeremy-C.	MIT	90	10	58	13	7	735
40	Krugman,-Paul-R.	MIT	210	177	1	442	1	442
41	McAfee,-R.-Preston	U TX Austin	13	19	194	53	13	451
42	Moulin,-Herve	Rice U	40	54	295	74	40	298
43	Slemrod,-Joel	U MI Ann Arbor	340	212	63	109	63	340
44	Woodford,-Michael	Princeton U	34	45	114	136	34	529
45	Levitt,-Steven-D.	U Chicago	22	21	90	55	21	513
46	Dixit,-Avinash	Princeton U	212	194	70	140	68	212
47	Fudenberg,-Drew	U Harvard	15	20	154	35	14	688
48	Keane,-Michael-P.	NYU	75	56	199	28	28	405
49	Edwards,-Sebastian	UCLA	307	291	33	148	18	307
50	Maskin,-Eric-S.	U Harvard	12	18	103	39	12	559

51	Cochrane,-John-H.	Fed. Res. Chicago	19	23	144	82	19	655
52	Svensson,-Lars-E.-O.	U Stockholm	33	29	128	66	18	886
53	Gale,-Douglas	NYU	31	41	177	40	20	598
54	Rotemberg,-Julio-J.	U Harvard	32	43	230	86	32	439
55	Manski,-Charles-F.	Northwestern U	272	153	36	112	17	522
56	Summers,-Lawrence-H.	US Treasury	165	165	64	368	64	394
57	Robinson,-Peter-M.	LSE	28	34	121	56	12	853
58	Feenstra,-Robert-C.	U CA Davis	98	91	109	102	70	513
59	Helpman,-Elhanan	U Harvard	25	25	115	108	25	808
60	Gorton,-Gary	U PA	114	40	227	32	32	710
61	Sappington,-David-E.-M.	U FL	275	124	207	153	124	275
62	Bohn,-Henning	U CA Santa Barbara	132	141	268	101	92	459
63	Kaplow,-Louis	U Harvard	682	648	23	20	20	682
64	Katz,-Lawrence-F.	U Harvard	168	105	49	230	49	580
65	Hubbard,-R.-Glenn	Columbia U	564	125	40	103	20	564
66	Obstfeld,-Maurice	U CA Berkeley	103	64	71	248	36	974
67	Innes,-Robert	U AZ	366	355	110	99	74	368
68	Cutler,-David-M.	U Harvard	51	39	44	177	25	827
69	Freeman,-Richard-B.	U Harvard	503	244	31	342	31	503
70	Canova,-Fabio	U Pompeu Fabra	332	232	290	22	22	332
71	Fuhrer,-Jeffrey-C.	Fed. Res. Boston	86	101	203	124	86	403
72	Rustichini,-Aldo	Boston U	128	138	278	212	87	320
73	Lewis,-Karen-K.	U PA	106	57	145	69	31	929
74	Gale,-William-G.	Brookings Instit.	237	192	117	96	49	481
75	Ravallion,-Martin	World Bank	853	592	19	121	4	853
76	Kahn,-Lawrence-M.	Cornell U	345	198	141	15	14	567
77	Ruhm,-Christopher-J.	U NC Greensboro	387	253	60	67	60	387
78	Jorgenson,-Dale-W.	U Harvard	216	156	124	427	124	446
79	Auerbach,-Alan-J.	U CA Berkeley	325	271	74	266	71	537
80	Samuelson,-Larry	U WI Madison	55	81	396	137	55	493
81	Romer,-Paul-M.	U Stanford	116	102	81	469	64	694
82	Bertola,-Giuseppe	U Torino	85	117	214	227	85	392
83	De-Long,-J.-Bradford	U CA Berkeley	352	239	56	306	56	371
84	Irwin,-Douglas-A.	Dartmouth College	208	246	158	196	88	626
85	Moffitt,-Robert-A.	Johns Hopkins U	1087	333	48	70	48	1087
86	Turnovsky,-Stephen-J.	U WA	828	543	170	6	6	828
87	Perron,-Pierre	Boston U	392	181	311	61	61	405
88	Fama,-Eugene-F.	U Chicago	1261	22	96	17	9	1261
89	Wright,-Randall	U PA	142	197	355	158	142	408
90	Haltiwanger,-John	U MD College Park	73	75	143	359	54	598
91	Grossman,-Gene-M.	Princeton U	26	46	152	168	26	752
92	Quiggin,-John	Australian Nat. U	510	580	47	398	2	580
93	Mishkin,-Frederic-S.	Columbia U	241	137	54	245	52	1397
94	Kocherlakota,-Narayana-R.	Fed. Minneapolis	176	171	162	270	57	576
95	Morris,-Stephen	U Yale	77	126	178	166	77	598
96	Stock,-James-H.	U Harvard	47	52	265	88	47	880
97	Weil,-David-N.	Brown U	93	87	133	191	71	688
98	Segal,-Uzi	U Western Ontario	68	78	275	219	34	640
99	Pesaran,-M.-Hashem	U Cambridge	1246	396	107	24	24	1246
100	Shavell,-Steven	U Harvard	844	590	7	37	4	844
101	Friedman,-Daniel	U CA Santa Cruz	134	134	333	94	61	779
102	Rajan,-Raghuram-G.	U Chicago	69	14	126	14	8	1439
103	Newey,-Whitney-K.	MIT	49	65	204	130	27	1015

104	Duffie,-Darrell	U Stanford	123	62	301	90	52	929
105	Griliches,-Zvi	U Harvard	222	158	24	506	24	643
106	Tabellini,-Guido	U Bocconi	80	121	211	272	80	549
107	Bernanke,-Ben-S.	Princeton U	271	222	112	370	112	377
108	Nordhaus,-William-D.	U Yale	290	199	38	872	38	872
109	Ireland,-Peter-N.	Boston College	254	292	446	123	123	446
110	Deaton,-Angus	Princeton U	96	95	137	206	95	1015
111	Blundell,-Richard	U College London	175	204	306	175	157	476
112	Levine,-Ross	U MN Twin Cities	189	128	134	309	78	549
113	Berger,-Allen-N.	Fed. Res. System	511	280	412	127	49	511
114	Harrington,-Joseph-E., Jr.	Johns Hopkins U	121	108	313	205	108	494
115	Waldfogel,-Joel	U PA	323	264	166	85	73	675
116	Engle,-Robert-F.	U CA San Diego	265	152	192	65	65	745
117	Newbery,-David-M.	U Cambridge	721	479	80	210	33	721
118	Zeckhauser,-Richard	U Harvard	399	324	105	263	105	415
119	Blau,-David-M.	U NC Chapel Hill	249	225	262	29	29	963
120	Benabou,-Roland	Princeton U	9	15	210	54	9	1122
121	Baumol,-William-J.	NYU	398	487	125	512	48	512
122	Roth,-Alvin-E.	U Harvard	5	7	274	71	5	1418
123	Fischer,-Stanley	IMF	303	227	11	1065	11	1065
124	Jackson,-Matthew-O.	Caltech	67	111	377	165	67	710
125	Wolpin,-Kenneth-I.	U PA	46	55	168	57	44	1582
126	Philipson,-Tomas-J.	U Chicago	160	175	222	83	63	900
127	Shi,-Shouyong	Queens U, Canada	62	84	617	49	49	963
128	Lewis,-Tracy-R.	U FL	255	99	413	81	81	827
129	Aghion,-Philippe	U College London	169	262	184	340	169	431
130	Taylor,-Mark-P.	U Warwick	1112	830	69	110	14	1112
131	Perotti,-Roberto	Columbia U	126	205	249	382	126	752
132	Currie,-Janet	UCLA	139	157	271	92	92	1077
133	Roland,-Gerard	Free U Brussels ULB	178	256	217	422	178	503
134	Galor,-Oded	Brown U	88	116	345	132	60	920
135	Krueger,-Anne-O.	U Stanford	252	201	42	895	42	931
136	Aiyagari,-S.-Rao	U Rochester	125	178	480	406	105	480
137	Slade,-Margaret-E.	U British Columbia	407	404	322	106	78	561
138	Romer,-David-H.	U CA Berkeley	52	47	91	290	45	1202
139	Peltzman,-Sam	U Chicago	199	223	139	93	39	1122
140	Murphy,-Kevin-M.	U Chicago	39	58	98	172	39	1245
141	McCallum,-Bennett-T.	Carnegie Mellon U	220	269	566	320	62	807
142	Shiller,-Robert-J.	U Yale	421	330	95	1022	79	1022
143	Gertler,-Mark	NYU	311	267	106	536	106	622
144	Hamilton,-James-D.	U CA San Diego	76	63	366	116	63	1015
145	Rosen,-Sherwin	U Stanford	454	332	82	431	60	797
146	Sala-I-Martin,-Xavier	Columbia U	204	273	360	452	180	452
147	Harvey,-Campbell-R.	Duke U	1959	60	160	47	47	1959
148	Costa,-Dora-L.	MIT	351	297	120	222	120	929
149	Milgrom,-Paul	U Stanford	45	76	228	356	45	1173
150	Epstein,-Larry-G.	U Rochester	17	36	415	50	17	1684
151	Henderson,-J.-Vernon	Brown U	180	261	420	202	75	751
152	Spulber,-Daniel-F.	Northwestern U	717	323	308	125	104	717
153	Thakor,-Anjan-V.	U MI Ann Arbor	1638	274	173	68	48	1638
154	Camerer,-Colin-F.	Caltech	112	122	161	403	112	1156
155	Thisse,-Jacques-Francois	Catholic U Louvain	824	645	233	208	37	824
156	Lindbeck,-Assar	U Stockholm	347	339	140	813	108	813

157	Rabin,-Matthew	U CA Berkeley	61	70	163	203	61	1622
158	Wildasin,-David-E.	Vanderbilt U	221	287	183	890	111	890
159	White,-Halbert	U CA San Diego	117	120	466	144	117	1202
160	Nickell,-S.	LSE	462	566	246	258	124	566
161	Bolton,-Patrick	Princeton U	100	132	189	269	100	1122
162	Ball,-Laurence	Johns Hopkins U	124	154	325	265	118	1050
163	Martimort,-David	U Pau	154	85	624	118	85	1077
164	Machin,-Stephen	U College London	821	772	164	301	86	851
165	Eichenbaum,-Martin	Fed. Res. Chicago	153	213	489	215	153	735
166	Bagwell,-Kyle	Columbia U	119	80	511	162	80	1050
167	Vives,-Xavier	U Auton. Barcelona	569	293	242	458	157	724
168	Choi,-Jay-Pil	Columbia U	422	182	344	366	182	912
169	Chiappori,-Pierre-Andre	U Chicago	92	135	374	456	92	909
170	Dufour,-Jean-Marie	U Montreal	186	170	361	131	91	1122
171	Karni,-Edi	Johns Hopkins U	294	419	190	396	71	952
172	Palfrey,-Thomas-R.	Caltech	108	167	318	275	108	1245
173	Ellison,-Glenn	MIT	44	38	252	52	38	2084
174	Bovenberg,-A.-Lans	U Tilburg	741	539	316	63	26	741
175	Frankel,-Jeffrey-A.	U Harvard	326	451	193	577	193	577
176	Santos,-Manuel-S.	U MN Twin Cities	65	93	465	143	65	1331
177	Attanasio,-Orazio-P.	U College London	151	241	654	115	50	909
178	Christiano,-Lawrence-J.	Northwestern U	280	266	726	122	122	726
179	Wolff,-Edward-N.	NYU	372	380	315	964	88	964
180	Nelson,-Daniel-B.	U Chicago	224	127	370	91	91	1439
181	Sugden,-Robert	U E Anglia	504	708	304	343	162	708
182	Holt,-Charles-A.	U VA	533	367	119	540	119	926
183	Blank,-Rebecca-M.	U MI Ann Arbor	276	231	138	423	138	880
184	Cooper,-Russell	Boston U	70	114	448	276	70	1189
185	Welch,-Ivo	U Yale	1194	107	309	64	64	1526
186	Gul,-Faruk	Princeton U	54	79	208	194	10	1622
187	Levine,-David-K.	UCLA	99	145	588	178	99	1077
188	Timmermann,-Allan	U CA San Diego	713	358	363	75	75	713
189	King,-Robert-G.	U VA	104	143	467	280	104	1156
190	Romer,-Christina-D.	U CA Berkeley	250	195	198	253	137	1526
191	Sims,-Christopher-A.	Princeton U	655	456	142	591	142	801
192	Mankiw,-N.-Gregory	U Harvard	444	390	43	884	43	1020
193	Blackorby,-Charles	U British Columbia	291	398	596	354	227	648
194	Frey,-Bruno-S.	U Zurich	778	927	97	775	9	927
195	Granger,-Clive-W.-J.	U CA San Diego	1392	675	86	319	46	1392
196	Lockwood,-Ben	U Warwick	674	579	365	73	73	674
197	Bresnahan,-Timothy-F.	U Stanford	473	289	206	328	196	1077
198	Hendry,-David-F.	U Oxford	546	626	388	334	30	1282
199	Goldin,-Claudia	U Harvard	82	86	182	285	82	1582
200	Easterly,-William	World Bank	135	214	340	329	135	1530

Kms: 10 top journals of Kalaitzidakis et al. Lppaga: Laband-Piette adjusted page count. Impact: article count weighted by impact factor. SM: 36 journals of Scott and Mitias. Min: minimum over 11 methodologies. Max: maximum over 11 methodologies. One of the disadvantages of averaging over methods is that those people that score zero on one criteria are penalized. People like Longstaff,-Francis-A., Saffran,-Bernard, Schwert,-G.-William, Denis,-David-J.,Graham,-John-R., Schultz,-Paul-H., Sunstein,-Cass-R., Jegadeesh,-Narasimhan, Pirrong, -Stephen-Craig, Cebula,-Richard-J., Turnbull,-Geoffrey-K. Brennan,-Michael-J.,Gompers,-Paul-A., Creedy,-John, Miceli,-Thomas-J., Bessembinder,-Hendrik, Verrecchia,-Robert-E., Kohn,-Robert, Kane,-Edward-J., Whaley,-Robert-E., Artus,-Patrick, Yinger,-John and DeAngelo,-Harry are in that case: they score high on the criteria on which they score but do not score at all in some rankings.

Table 9: the ranking of economists by citations

	Names	Institution	citescoyw	cites	citescoau	citescoauyw	cites
1	Johansen,-Soren	European U Inst.	1	1	1538.0	160.2	2104
2	Barro,-Robert-J.	U Harvard	3	2	1179.2	126.5	1535
3	Krugman,-Paul-R.	MIT	2	7	1084.3	154.8	1187
4	Andrews,-Donald	U Yale	5	10	914.2	110.6	1161
5	Phillips,-Peter-C.-B.	U Yale	6	5	887.0	105.7	1331
6	Romer,-Paul-M.	U Stanford	9	16	832.8	91.1	937
7	Fama,-Eugene-F.	U Chicago	4	9	821.0	111.9	1182
8	Juselius,-Katarina	U Copenhagen	19	8	618.0	65.0	1183
9	Levine,-Ross	U MN Twin Cities	7	12	614.7	105.6	1097
10	Shleifer,-Andrei	U Harvard	8	3	599.2	94.3	1448
11	Kahneman,-Daniel	Princeton U	14	4	595.3	72.9	1349
12	Krueger,-Alan-B.	Princeton U	11	14	589.8	83.5	1012
13	Hansen,-Bruce-E.	U WI Madison	13	31	572.0	77.1	752
14	Rebelo,-Sergio	Northwestern U	23	27	548.3	60.5	802
15	Nelson,-Daniel-B.	U Chicago	34	48	545.7	55.4	611
16	Milgrom,-Paul	U Stanford	21	13	533.5	61.8	1096
17	Tirole,-Jean	U Toulouse I	10	15	516.7	88.9	966
18	Lucas,-Robert-E., Jr.	U Chicago	30	62	516.0	57.2	542
19	Murphy,-Kevin-M.	U Chicago	25	6	493.3	58.5	1189
20	Card,-David	U CA Berkeley	28	37	490.8	57.5	701
21	Svensson,-Lars-E.-O.	U Stockholm	12	56	482.7	83.4	572
22	Helpman,-Elhanan	U Harvard	17	17	481.5	67.3	923
23	Moffitt,-Robert-A.	Johns Hopkins U	26	60	468.8	58.2	555
24	Sala-I-Martin,-Xavier	Columbia U	16	30	456.8	67.7	770
25	Viscusi,-W.-Kip	U Harvard	24	39	453.0	59.5	650
26	Borjas,-George-J.	U Harvard	18	58	448.2	65.6	559
27	Vishny,-Robert-W.	U Chicago	20	11	444.5	64.7	1108
28	French,-Kenneth-R.	MIT	22	22	418.5	60.9	840
29	Stock,-James-H.	U Harvard	32	18	416.8	56.6	918
30	Quah,-Danny-T.	LSE	31	100	406.0	57.1	419
31	Heckman,-James-J.	U Chicago	15	42	398.3	68.3	640
32	Campbell,-John-Y.	U Harvard	29	41	396.3	57.3	646
33	Caballero,-Ricardo-J.	MIT	61	54	396.2	46.1	582
34	Alesina,-Alberto	U Harvard	39	26	395.3	53.5	810
35	Bound,-John	U MI Ann Arbor	37	19	394.2	54.0	879
36	Bollerslev,-Tim	Duke U	33	21	386.7	56.1	853
37	Tversky,-Amos	U Stanford	68	24	384.3	43.5	823
38	Mankiw,-N.-Gregory	U Harvard	70	20	380.8	43.3	862
39	Thaler,-Richard-H.	U Chicago	62	22	373.0	45.8	840
40	Katz,-Lawrence-F.	U Harvard	42	29	369.5	51.9	771
41	Griliches,-Zvi	U Harvard	65	71	366.0	44.6	521
42	Jensen,-Michael-C.	U Harvard	81	61	365.5	39.8	549
43	Perron,-Pierre	Boston U	53	66	361.8	48.9	531
44	Grossman,-Gene-M.	Princeton U	56	33	359.2	47.2	726
45	Rodrik,-Dani	U Harvard	27	77	359.0	57.9	496
46	Harvey,-Campbell-R.	Duke U	46	57	357.8	50.9	567
47	Young,-Alwyn	U Chicago	40	147	354.0	52.3	354
48	King,-Robert-G.	U VA	74	28	347.6	42.5	800
49	Nordhaus,-William	U Yale	79	98	346.0	41.0	422
50	Taylor,-Mark-P.	U Warwick	38	59	344.3	53.6	558
51	Osterwald-Lenum,-M	U Copenhagen	91	158	338.0	37.6	338

52	Pindyck,-Robert-S.	MIT	92	141	337.5	37.5	358
53	Aghion,-Philippe	U College London	49	32	335.9	50.3	751
54	Scharfstein,-David-S.	MIT	87	25	331.0	37.9	813
55	Rajan,-Raghuram-G.	U Chicago	36	75	324.7	54.5	514
56	Berger,-Allen-N.	Fed. Res. System	43	36	323.3	51.7	712
57	Stein,-Jeremy-C.	MIT	52	40	322.7	49.2	648
58	Chib,-Siddhartha	Washington U, MO	45	79	318.2	50.9	487
59	Moravcsik,-Andrew	U Harvard	44	184	313.8	50.9	317
60	Poterba,-James-M.	MIT	60	74	313.0	46.3	515
61	Engle,-Robert-F.	U CA San Diego	71	35	312.2	43.2	715
62	Obstfeld,-Maurice	U CA Berkeley	47	89	312.0	50.8	452
63	Heston,-Alan	U PA	139	49	308.5	31.9	610
64	Becker,-Gary-S.	U Chicago	83	71	308.0	38.5	521
65	Summers,-Lawrence	US Treasury	94	46	307.5	37.1	621
66	Rogoff,-kenneth	U Harvard	51	118	307.5	49.6	389
67	Cochrane,-John-H.	Fed. Res. Chicago	73	179	304.5	42.9	321
68	Holmstrom,-Bengt	MIT	54	45	303.3	48.4	624
69	Summers,-Robert	U PA	153	50	301.5	30.9	603
70	Knetsch,-Jack-L.	Simon Fraser U	140	38	298.3	31.8	652
71	Christiano,-Lawrence	Northwestern U	98	67	295.2	36.3	530
72	Stiglitz,-Joseph-E.	World Bank	63	111	294.3	45.5	402
73	Shavell,-Steven	U Harvard	50	103	292.5	50.0	415
74	Breslow,-N.-E.	U WA	123	77	292.5	33.5	496
75	Fudenberg,-Drew	U Harvard	89	47	291.8	37.8	615
76	Murphy,-Kevin-J.	U Southern CA	146	55	287.0	31.5	577
77	Hanemann,-W.	U CA Berkeley	114	132	286.5	34.7	375
78	Fearon,-James-D.	U Stanford	41	192	286.5	52.3	312
79	Edwards,-Sebastian	UCLA	64	140	286.3	45.3	359
80	Romer,-David-H.	U CA Berkeley	90	44	283.0	37.7	632
81	Watson,-Mark-W.	Princeton U	88	53	281.8	37.8	583
82	Eichenbaum,-Martin	Fed. Res. Chicago	96	52	278.7	36.9	585
83	Diebold,-Francis-X.	NYU	77	51	277.0	41.2	594
84	Schwert,-G.-William	U Rochester	144	124	274.0	31.6	381
85	Kaplow,-Louis	U Harvard	72	147	273.5	43.2	354
86	Lott,-John-R., Jr.	U Yale	86	108	272.0	38.0	405
87	Rabin,-Matthew	U CA Berkeley	35	209	268.8	54.7	304
88	Lakonishok,-Josef	U IL Urbana Ch.	106	34	268.8	35.6	724
89	Roberts,-John	U Stanford	162	63	268.7	30.3	540
90	Meyer,-Bruce-D.	Northwestern U	175	153	267.7	29.6	347
91	Ravallion,-Martin	World Bank	59	91	266.0	46.5	448
92	Tabellini,-Guido	U Bocconi	122	69	263.7	33.6	525
93	Dixit,-Avinash	Princeton U	112	204	263.2	34.8	305
94	Laffont,-Jean-Jacques	U Toulouse I	76	80	262.8	41.8	486
95	Nickell,-S.	LSE	66	113	261.3	44.2	397
96	Constantinides,-G.-M	U Chicago	213	187	260.8	25.9	315
97	Angrist,-Joshua-D.	MIT	80	86	260.2	40.7	463
98	Freeman,-Richard-B.	U Harvard	84	109	258.7	38.4	403
99	Hart,-Oliver	U Harvard	105	71	258.0	35.8	521
100	Lo,-Andrew-W.	MIT	127	94	254.5	33.0	431
101	Newey,-Whitney-K.	MIT	158	143	254.3	30.6	357
102	Garrett,-Geoffrey	U Yale	75	167	253.7	42.3	332
103	Bernanke,-Ben-S.	Princeton U	100	82	253.3	36.1	479
104	Pesaran,-M.-Hashem	U Cambridge	69	76	253.2	43.5	506

105	Sen,-Amartya	U Cambridge	58	280	253.0	47.0	253
106	Kimball,-Miles-S.	U MI Ann Arbor	195	266	250.5	27.6	261
107	Hamilton,-James-D.	U CA San Diego	138	174	250.0	31.9	326
108	Jones,-Charles-I.	U Stanford	48	194	244.0	50.7	311
109	Andreoni,-James	U WI Madison	160	247	243.8	30.3	273
110	Topel,-Robert-H.	U Chicago	169	189	243.7	29.9	314
111	Sims,-Christopher-A.	Princeton U	180	96	243.5	29.3	425
112	Bertola,-Giuseppe	U Torino	194	124	240.3	27.8	381
113	Stulz,-Rene-M.	OH State U	143	92	240.0	31.6	447
114	Blinder,-Alan-S.	Princeton U	166	117	237.5	30.2	390
115	Smith,-V.-Kerry	NC State U	176	137	237.3	29.4	362
116	Renelt,-David	U Harvard	210	83	236.5	26.3	473
117	North,-Douglass-C.	Washington U MO	181	271	236.0	29.2	260
118	De-Long,-J.-Bradford	U CA Berkeley	240	43	234.4	24.7	635
119	Camerer,-Colin-F.	CALTECH	57	99	234.3	47.1	421
120	Moore,-John	LSE	103	81	233.7	35.8	480
121	Matsuyama,-Kiminori	Northwestern U	186	271	233.3	28.6	260
122	Ritter,-Jay-R.	U FL	101	147	232.2	35.9	354
123	Banerjee,-Abhijit-V.	MIT	173	209	230.5	29.7	304
124	Neumark,-David	MI State U	95	87	230.2	37.0	462
125	Williamson,-Oliver-E.	U CA Berkeley	125	335	229.0	33.1	229
126	Machin,-Stephen	U College London	93	85	228.2	37.2	464
127	Young,-H.-Peyton	Johns Hopkins U	154	310	225.5	30.8	240
128	Rosenzweig,-Mark-R.	U PA	134	84	223.7	32.2	469
129	Haas,-Peter-M.	U MA Amherst	232	315	223.5	24.8	239
130	Benabou,-Roland	Princeton U	82	310	221.5	38.8	240
131	Holzer,-Harry-J.	MI State U	161	237	221.5	30.3	282
132	Besley,-Timothy	LSE	116	112	221.0	34.5	400
133	Newhouse,-Joseph-P.	U Harvard	126	285	219.3	33.0	251
134	Weil,-David-N.	Brown U	104	64	219.0	35.8	536
135	Sunstein,-Cass-R.	U Chicago	55	273	218.3	47.4	259
136	Cheung,-Yin-Wong	U CA Santa Cruz	124	120	217.6	33.4	387
137	Massey,-Douglas-S.	U PA	109	104	217.3	35.4	413
138	Deaton,-Angus	Princeton U	165	219	217.0	30.2	298
139	Keane,-Michael-P.	NYU	121	172	216.8	33.8	329
140	Kaplan,-Steven-N.	U Chicago	145	176	216.5	31.5	325
141	Benhabib,-Jess	NYU	142	90	215.7	31.8	450
142	Diamond,-Douglas-W.	U Chicago	225	331	215.0	25.1	230
143	Ferson,-Wayne-E.	U WA	201	105	215.0	26.8	410
144	Frey,-Bruno-S.	U Zurich	108	187	214.7	35.4	315
145	Samuelson,-Larry	U WI Madison	157	100	214.2	30.6	419
146	Osterman,-Paul	MIT	78	378	212.5	41.1	215
147	Rudebusch,-Glenn-D.	Fed. Res. S Francisco	163	176	211.5	30.3	325
148	Ericsson,-Neil-R.	Federal Res. System	224	102	210.0	25.1	417
149	Hendry,-David-F.	U Oxford	188	96	206.8	28.2	425
150	Kashyap,-Anil-K.	U Chicago	226	67	206.8	25.1	530
151	Aoki,-Masahiko	U Stanford	390	411	206.0	19.4	206
152	Mailath,-George-J.	U PA	208	88	205.8	26.4	457
153	Ruhm,-Christopher-J.	U NC Greensboro	135	389	205.2	32.1	212
154	Feldstein,-Martin	U Harvard	67	331	205.0	44.0	230
155	Baillie,-Richard-T.	MI State U	149	118	204.8	31.1	389
156	Weitzman,-Martin-L.	U Harvard	130	288	204.5	32.7	250
157	Portney,-Paul-R.	Res. for the Future	212	189	204.5	26.0	314

158	Clayton,-D.-G.	U Cambridge	220	106	203.5	25.4	407
159	Gertler,-Mark	NYU	133	113	203.3	32.2	397
160	Gali,-Jordi	U Pompeu Fabra	119	321	201.7	33.9	236
161	Manski,-Charles-F.	Northwestern U	155	278	201.3	30.7	255
162	Jorion,-Philippe	U CA Irvine	249	192	201.0	24.2	312
163	Granger,-Clive-W.-J.	U CA San Diego	129	132	200.5	32.9	375
164	Sowell,-Fallaw	Carnegie Mellon U	321	439	200.0	21.4	200
165	Eskridge,-William-N.	Georgetown U, DC	304	304	200.0	22.0	242
166	Diamond,-Peter-A.	MIT	148	173	198.8	31.1	328
167	Loomis,-John-B.	CO State U	238	93	198.4	24.7	438
168	Rossi,-Peter-E.	U Chicago	185	73	198.3	28.7	518
169	Mishkin,-Frederic-S.	Columbia U	151	326	198.0	31.0	233
170	Fan,-Jianqing	UCLA	254	315	198.0	23.9	239
171	Kroner,-Kenneth-F.	Barclays Global Inv.	217	65	197.7	25.6	532
172	Roth,-Alvin-E.	U Harvard	137	106	197.3	31.9	407
173	Drazen,-Allan	U MD College Park	328	115	197.0	21.1	394
174	Easterly,-William	World Bank	110	124	196.6	35.2	381
175	Audretsch,-David-B.	IN U, Bloomington	99	154	195.5	36.1	343
176	Fischer,-Stanley	IMF	204	254	194.2	26.7	268
177	Wildasin,-David-E.	Vanderbilt U	281	383	194.0	22.9	214
178	Kocherlakota,-N.	Fed Res Minneapolis	190	315	193.7	27.9	239
179	Friedman,-Daniel	U CA Santa Cruz	189	345	193.5	27.9	226
180	Woodford,-Michael	Princeton U	267	215	193.2	23.6	301
181	Holtz-Eakin,-Douglas	Syracuse U, NY	184	196	193.2	28.8	310
182	Ellison,-Glenn	MIT	111	262	193.0	35.0	263
183	Katz,-Michael-L.	U CA Berkeley	284	164	193.0	22.7	334
184	Rose,-Andrew-K.	U CA Berkeley	120	141	192.7	33.9	358
185	Kahn,-Lawrence-M.	Cornell U	174	204	191.8	29.7	305
186	Mark,-Nelson-C.	OH State U	255	224	191.5	23.9	295
187	Thomas,-Duncan	RAND Corporation	216	241	190.8	25.6	280
188	Galor,-Oded	Brown U	115	176	190.0	34.6	325
189	Storper,-Michael	UCLA	296	383	189.5	22.2	214
190	Madhavan,-Ananth	U Southern CA	150	181	188.8	31.1	319
191	Gruber,-Jonathan	MIT	113	231	188.7	34.7	290
192	Cropper,-Maureen-L.	World Bank	275	94	188.5	23.3	431
193	Browning,-Martin	U Copenhagen	246	184	188.3	24.2	317
194	Lohmann,-Susanne	UCLA	241	434	186.0	24.6	201
195	Bolton,-Patrick	Princeton U	182	135	185.3	29.2	367
196	Smith,-Bruce-D.	U TX Austin	141	128	185.2	31.8	377
197	Jegadeesh,-N.	U IL Urbana Ch.	289	209	185.2	22.5	304
198	Gilson,-Stuart-C.	U Harvard	355	229	185.0	20.4	292
199	Maskin,-Eric-S.	U Harvard	102	137	184.3	35.9	362
200	Titman,-Sheridan	U TX Austin	196	120	184.3	27.5	387

Citescoau: citation count weighted for co-authorship and multiple affiliations. Citescoauyw: citation count weighted for co-authorship, multiple affiliations and differences in years since publication. Cites: citation count.

Table 10: Reputation versus output

	Ranking (1994-1998).		Ranking (1990-2000).
Steve Levitt	5	Jean Tirole	2
Edward Glaeser	19	Andrei Schleifer	22
Michael Kremer	112	Alberto Alesina	29
Wolfgang Pesendorfer	118	Paul Krugman	40
Glenn Ellison	242	Lawrence Summers	56
Casey Mulligan	252	Gregory Mankiw	192
Caroline Hoxby	346	Jeffrey Sachs	315
Matthew Rabin	501	Sanford Grossman	1434
David Liabson	885		

Table A1: the contents of the database

Year	# my database	# ECONLIT
1969	4473	4473
1970	5081	5081
1971	5012	5012
1972	5685	5685
1973	5981	5981
1974	5965	5965
1975	5997	5997
1976	6403	6403
1977	7077	7077
1978	7568	7569
1979	7799	7799
1980	8220	8220
1981	8420	8420
1982	8391	8391
1983	9418	9418
1984	9552	9552
1985	9918	9918
1986	9872	9872
1987	9933	9933
1988	10537	10537
1989	10767	10768
1990	11190	11254
1991	11833	11885
1992	13000	13059
1993	13362	13475
1994	14265	14355
1995	15634	15818
1996	17327	17675
1997	17580	18336
1998	17208	19578
1999	19365	20298
2000	16572	20482

TABLE A2: The insider-bias of economics journals.

AER	50-59		60-69		85-90		90-00
U Ca Berkeley	6.9	MIT	4.7	MIT		U Harvard	6.1
MIT	6.4	Yale	4.5	Harvard		U Stanford	3.9
Stanford	5.4	U PA	4.4	Princeton		Princeton	3.2
U MI	3.8	U Ca Berkeley	4.3	U Chicago		MIT	3.2
U Chicago	3.8	Stanford	4.2	U MI		U Chicago	3.1
Sumtop5	26.3	Sumtop5	22.1			Sumtop5	19.6
JPE	50-59		60-69		85-90		90-00
U Chicago	15.6	U Chicago	10.6	U Chicago		U Chicago	9.4
Stanford	4.4	MIT	3.7	Stanford		MIT	5.1
Columbia	4.4	Yale	3.6	Harvard		U Harvard	4.5
MIT	3.5	Carnegie-Mel.	2.8	MIT		U Stanford	4.5
U WI	3	Columbia	2.6	Princeton		U PA	4.1
Sumtop5	30.9	Sumtop5	23.3			Sumtop5	27.5
QJE	50-59		60-69		85-90		90-00
Harvard	14.5	Harvard	12.3	MIT		U Harvard	13.4
U Ca Berkeley	7.2	MIT	4.6	Princeton		MIT	10.7
MIT	5	U Ca Berkeley	4.1	Harvard		U Chicago	8.8
Columbia	3.4	Yale	4.1	Northwestern		Princeton U	5.3
Princeton	2.8	U PA	4	Stanford		U Ca, Berkeley	3
Sumtop5	32.9	Sumtop5	29.1			Sumtop5	41.1
ECNMTRCA	50-59		60-69		85-90		90-00
		Stanford	6.1	MIT		U Yale	7.3
		U Minnesota	4.7	Princeton		Northwestrn U	5.9
		U Chicago	4.5	Yale		MIT	4.6
		Yale	4.4	Harvard		U Harvard	3.9
		MIT	3.8	Stanford		U Chicago	3.8
		Sumtop5	23.5			Sumtop5	25.5

Table A3: The share of different subfields in the pages of 4 top journals.

Title	Subj. 1	Subj. 2	Subj. 3	Subj. 1	Subj. 2	Subj. 3
AER	Micro	Labor	Macro	17.3	14.2	12.5
ECMTRA	Quant M	Micro	Labor	44.4	31.2	5.4
JPE	Micro	Labor	Macro	21.6	15.1	9.5
QJE	Labor	Micro	Dev&Gr	18.6	17.5	11.3

Dev&Gr: Economic Development, Technical Change and Growth

Quant. M : Mathematical and Quantitative Methods

Table A4: The distribution of journals over the subfields.

Subfield	Econlit	JCR	JCR/Econlit
General Economics and Teaching	5	1	0.20
Methodology and History of Economic Thought	19	6	0.32
Mathematical and Quantitative Methods	25	12	0.48
Microeconomics	51	30	0.59
Macroeconomics and Monetary Economics	84	22	0.26
International Economics	63	19	0.30
Financial Economics	76	18	0.24
Public Economics	16	7	0.44
Health, Education and Welfare	16	7	0.44
Labor and Demographic Economics	60	31	0.52
Law and Economics	10	5	0.50
Industrial Organization	39	11	0.28
Business Administration and Business Economics	17	6	0.35
Economic History	19	8	0.42
Economic Devel., Techn. Change and Growth	87	18	0.21
Economic systems	31	16	0.52
Agricultural and Natural resources	47	19	0.40
Urban, Rural and Regional Economics	37	23	0.62
Other Topics	2	0	0.00

JCR: Journal Citation Reports

Table A5: distribution of authors over the number of articles.

Score	#article	#articles-co-authors	# quality-articles	# cites	# cites (articles)
0	0.0	0.0	0.0	26.1	30.2
1	55.0	61.3	77.8	12.5	15.5
2	15.2	14.2	9.9	8.2	10.1
3	7.5	6.7	4.0	5.7	7.0
4	4.5	4.1	2.3	4.6	5.3
5	3.1	2.8	1.5	3.4	4.1
6	2.3	2.0	1.0	3.0	3.3
7	1.7	1.5	0.7	2.4	2.7
8	1.4	1.1	0.5	2.0	2.1
9	1.1	0.9	0.4	1.7	1.8
10	0.9	0.8	0.3	1.5	1.6
11	0.8	0.6	0.2	1.5	1.4
12	0.7	0.5	0.2	1.2	1.1
13	0.6	0.4	0.2	1.1	1.0
14	0.5	0.4	0.1	1.0	0.9
15	0.5	0.3	0.1	1.0	0.8
16	0.4	0.3	0.1	0.9	0.7
17	0.3	0.3	0.1	0.7	0.6
18	0.3	0.2	0.1	0.8	0.6
19	0.3	0.2	0.1	0.7	0.5
20	0.2	0.1	0.1	0.7	0.5
20+	2.6	1.3	0.3	19.2	8.2

Table A6a: Lotka's law:1996-2000

1996-2000	Articles	articlescoau	Articlesbauw
	N=10	N=10	N=10
constant	-0.14 (0.09)	0.26(0.16)	-0.26(0.21)
coefficient	-2.03(0.06)	-2.49(0.1)	-3.49(0.13)
Rsquare	0.99	0.99	0.99
	N=30	N=20	
constant	1.28(0.3)	0.88(0.26)	
coefficient	-2.85(0.11)	-3.01(0.12)	
Rsquare	0.96	0.97	

Table A6b: Lotka's law:1990-2000

1990-2000	Articles	articlescoau	Articlesbauw
	N=10	N=10	N=10
constant	-0.02 (0.03)	-0.01(0.05)	-0.11(0.08)
coefficient	-1.76(0.02)	-1.99(0.03)	-2.61(0.05)
Rsquare	0.99	0.99	0.99
	N=30	N=30	N=20
constant	-0.5(0.15)	0.77(0.21)	0.33(0.22)
coefficient	-2.13(0.06)	-2.55(0.08)	-2.97(0.1)
Rsquare	0.98	0.97	0.98
	N=50		
constant	-1.25(0.23)		
coefficient	-2.52(0.07)		
Rsquare	0.96		

Table A6c: Lotka's law:1969-2000

1969-2000	Articles	articlescoau	Articlesbauw
	N=10	N=10	N=10
constant	-0.04 (0.02)	-0.08(0.04)	-0.25(0.11)
coefficient	-1.75(0.01)	-1.88(0.02)	-2.33(0.07)
Rsquare	0.99	0.99	0.99
	N=30	N=30	N=30
constant	-0.14(0.07)	0.24(0.1)	0.04(0.13)
coefficient	-1.87(0.03)	-2.01(0.04)	-2.49(0.05)
Rsquare	0.99	0.99	0.99
	N=50	N=50	
constant	-0.55(0.12)	-0.7(0.15)	
coefficient	-2.08(0.04)	-2.34(0.05)	
Rsquare	0.98	0.98	

Table A7: the importance of the subfields (1991-2000).

Name	Unweighted			Bauwens		
	All	Uni	Non Uni	All	Uni	Non Uni
General Economics and Teaching	1.1	1.3	0.7	1.2	1.3	0.7
Methodology and Hist. of Econ. Thought	1.8	2.1	0.9	1.7	2.1	0.9
Mathematical and Quantitative Methods	4.7	5.4	2.9	4.9	5.6	2.9
Microeconomics	7.4	8.5	4.2	7.5	8.7	4.2
Macroeconomics and Monetary Econ.	5.6	4.9	7.5	5.6	4.9	7.3
International Economics	7.1	6.5	8.8	7.0	6.4	8.7
Financial Economics	10.1	10.2	9.8	9.9	10.0	9.6
Public Economics	3.9	3.3	5.7	3.8	3.2	5.5
Health, Education and Welfare	5.5	4.9	7.1	5.6	5.0	7.2
Labor and Demographic Economics	9.6	9.7	9.5	9.7	9.8	9.5
Law and Economics	1.8	1.6	2.2	1.8	1.6	2.2
Industrial Organization	8.5	8.3	9.0	8.4	8.2	9.0
Business Admin. and Business Economics	4.1	5.0	1.8	4.1	5.0	1.8
Economic History	2.1	2.4	1.0	2.1	2.5	1.0
Econ. Dev., Techn. Change and Growth	8.2	7.8	9.3	8.2	7.8	9.4
Economic systems	3.4	3.0	4.5	3.5	3.0	4.7
Agricultural and Natural resources	9.3	8.8	10.5	9.3	8.8	10.6
Urban, Rural and Regional Economics	5.5	5.9	4.5	5.6	5.9	4.6
Other Topics	0.2	0.3	0.1	0.2	0.2	0.2

All takes all authors for which we have information on the JEL Codes. We were able to compute this for about 82000 persons. About 1.5% of the articles did not have a JEL code. Uni uses only the university -affiliated economists. Non-uni uses authors affiliated to research institutions, government agencies etc.

Table A8: distribution over geographical areas.

	% instit.	% univ.	% non - univ.	% economists	% univ. economists	% non – univ. economists
US	30.4	29.1	31.1	40.1	42.0	34.4
Europe	29.1	29.4	28.9	32.6	34.4	27.0
Asia	13.0	21.3	8.5	7.7	8.0	6.9
Canada	3.8	2.5	4.4	4.6	5.0	3.6
Australia	3.2	1.8	3.9	4.0	4.1	3.4
Latin Am.	4.0	5.6	3.1	2.5	2.6	2.2
Africa	3.0	3.5	2.7	1.5	1.6	1.5
Middle East	1.3	1.9	0.9	1.1	1.2	0.7
Ex-USSR	2.5	3.5	2.0	1.1	0.9	1.4
Unknown	9.8	1.4	14.3	4.7	0.1	18.8

Unknown are people with known affiliation but for which the region of that affiliation is unknown or international. Univ. are education institutions, Non-Univ. are research institutes, government agencies, etc. Econ. Stands for economists.

Table A9: distribution over countries of institutions and economists.

	% instit.	% univ.	% non - univ.	% econ.	% univ. econ.	% non - univ. econ	Herf.
UK	5.9	5.2	6.3	9.0	10.6	4.2	0.014
Canada	3.8	2.5	4.4	4.6	5.0	3.6	0.026
Germany	3.7	3.8	3.7	4.0	4.1	3.7	0.014
CA	2.9	2.2	3.3	3.9	4.5	2.2	0.056
France	3.0	4.2	2.3	3.5	3.7	3.1	0.019
NY	3.2	2.8	3.4	3.3	3.5	2.5	0.048
Australia	2.6	1.4	3.2	3.3	3.4	2.7	0.037
Italy	2.3	2.4	2.3	2.7	2.7	2.4	0.024
MA	1.6	1.2	1.8	2.4	2.8	1.4	0.132
Netherlands	1.5	0.8	1.9	2.2	2.3	2.0	0.059
Spain	1.6	2.0	1.4	2.1	2.3	1.4	0.032
PA	1.2	2.0	0.8	2.0	2.5	0.5	0.113
Japan	2.9	5.4	1.6	2.0	2.2	1.4	0.020
IL	1.3	1.1	1.4	1.9	2.2	1.0	0.107
TX	1.3	1.3	1.3	1.8	2.2	0.7	0.085
DC	2.8	0.9	3.8	1.7	0.8	4.4	0.045
India	2.9	5.1	1.7	1.3	1.2	1.7	0.017
MI	0.6	0.8	0.5	1.2	1.6	0.2	0.217
OH	0.7	0.9	0.6	1.2	1.5	0.4	0.119
Sweden	1.0	0.9	1.1	1.1	1.2	1.0	0.068

Univ. are education institutions, Non-Univ. are research institutes, government agencies, etc. Herf. is the Herfindahl-index. Econ. Stands for economists.

Table A10: The Most Cited Articles 1975-2000

# Cites	Journal	Year	Author 1	Author 2	Author 3
2638	Econometrica	1980	WHITE, H		
2521	Econometrica	1979	KAHNEMAN, D	TVERSKY, A	
2428	Econometrica	1987	ENGLE, RF	GRANGER, CWJ	
2330	Journal-of-Financial-Economics	1976	JENSEN, MC	MECKLING, WH	
1830	Econometrica	1979	HECKMAN, JJ		
1446	Journal-of-the-American-Statistical-Association	1979	DICKEY, DA	FULLER, WA	
1373	Journal-of-Economic-Dynamics-and-Control	1988	JOHANSEN, S		
1361	Econometrica	1978	HAUSMAN, JA		
1297	Journal-of-the-American-Statistical-Association	1979	CLEVELAND, WS		
1265	Econometrica	1982	ENGLE, RF		
1153	Econometrica	1981	DICKEY, DA	FULLER, WA	
1108	Econometrica	1982	HANSEN, LP		
1046	Journal-of-Political-Economy	1986	ROMER, PM		
986	Journal-of-Monetary-Economics	1988	LUCAS, RE		
947	Journal-of-Monetary-Economics	1982	NELSON, CR	PLOSSER, CI	
945	Econometrica	1980	SIMS, CA		
922	Econometrica	1987	NEWHEY, WK	WEST, KD	
913	Journal-of-Law-and-Economics	1976	PELTZMAN, S		
887	Oxford-Bulletin-of-Economics-and-Statistics	1990	JOHANSEN, S	JUSELIUS, K	
846	Journal-of-Law-and-Economics	1978	KLEIN,-B.	CRAWFORD, RG	ALCHIAN, A.

Table A11: the percentage of articles cited so far.

	#articles	# cited	#cited>10	#cited>50	% cited	%cited>10	%cited>50
1975	3850	2707	741	123	70.3	19.2	3.2
1976	4266	3015	939	181	70.7	22.0	4.2
1977	4568	3280	1016	193	71.8	22.2	4.2
1978	4616	3275	1003	201	70.9	21.7	4.4
1979	4524	3236	1013	204	71.5	22.4	4.5
1980	4934	3644	1198	212	73.9	24.3	4.3
1981	5129	3676	1108	212	71.7	21.6	4.1
1982	5127	3842	1176	253	74.9	22.9	4.9
1983	5700	4258	1310	255	74.7	23.0	4.5
1984	5540	4208	1302	210	76.0	23.5	3.8
1985	5834	4430	1334	251	75.9	22.9	4.3
1986	5800	4496	1315	245	77.5	22.7	4.2
1987	6146	4805	1423	193	78.2	23.2	3.1
1988	6619	5034	1421	211	76.1	21.5	3.2
1989	6835	5191	1428	204	75.9	20.9	3.0
1990	7116	5503	1544	192	77.3	21.7	2.7
1991	7246	5607	1410	188	77.4	19.5	2.6
1992	7453	5648	1411	162	75.8	18.9	2.2
1993	7720	5885	1303	108	76.2	16.9	1.4
1994	7639	5788	1170	104	75.8	15.3	1.4
1995	8238	6086	1020	63	73.9	12.4	0.8
1996	8490	6098	841	30	71.8	9.9	0.4
1997	8624	5879	528	19	68.2	6.1	0.2
1998	8901	5237	296	3	58.8	3.3	0.0
1999	8997	4222	77	0	46.9	0.9	0
2000	7816	2049	7	0	26.2	0.1	0

Table A12: Rankcorrelations between methodologies, based on 5282 persons.

	articles	Bauw	Impact	Lpart	Lparta	pages	Lppag	Lppaga	KMSori	KMS	HABM	SM	Cites	Citesco	Citesyw
articles	1.00	0.96	0.83	0.76	0.50	0.94	0.65	0.44	0.28	0.29	0.52	0.59	0.63	0.66	0.64
Bauw	0.96	1.00	0.93	0.88	0.64	0.93	0.78	0.59	0.40	0.41	0.63	0.71	0.71	0.76	0.75
Impact	0.83	0.93	1.00	0.94	0.75	0.84	0.86	0.71	0.53	0.54	0.69	0.75	0.75	0.81	0.81
LPart	0.76	0.88	0.94	1.00	0.85	0.78	0.91	0.79	0.60	0.62	0.74	0.80	0.71	0.77	0.77
LParta	0.50	0.64	0.75	0.85	1.00	0.56	0.83	0.94	0.83	0.83	0.69	0.74	0.55	0.61	0.63
pages	0.94	0.93	0.84	0.78	0.56	1.00	0.73	0.56	0.38	0.39	0.62	0.70	0.67	0.70	0.70
LPPag	0.65	0.78	0.86	0.91	0.83	0.73	1.00	0.89	0.70	0.72	0.79	0.86	0.70	0.75	0.77
LPPaga	0.44	0.59	0.71	0.79	0.94	0.56	0.89	1.00	0.89	0.89	0.74	0.79	0.57	0.62	0.65
KMSori	0.28	0.40	0.53	0.60	0.83	0.38	0.70	0.89	1.00	0.99	0.65	0.62	0.41	0.45	0.49
KMS	0.29	0.41	0.54	0.62	0.83	0.39	0.72	0.89	0.99	1.00	0.65	0.63	0.42	0.47	0.50
HABM	0.52	0.63	0.69	0.74	0.69	0.62	0.79	0.74	0.65	0.65	1.00	0.88	0.56	0.60	0.63
SM	0.59	0.71	0.75	0.80	0.74	0.70	0.86	0.79	0.62	0.63	0.88	1.00	0.62	0.66	0.69
Cites	0.63	0.71	0.75	0.71	0.55	0.67	0.70	0.57	0.41	0.42	0.56	0.62	1.00	0.97	0.92
Citesco	0.66	0.76	0.81	0.77	0.61	0.70	0.75	0.62	0.45	0.47	0.60	0.66	0.97	1.00	0.96
Citesyw	0.64	0.75	0.81	0.77	0.63	0.70	0.77	0.65	0.49	0.50	0.63	0.69	0.92	0.96	1.00

Articles: article count. Bauw: article count weighted by Bauwens' weights. Impact: article count weighted by impact factor. LPart: Laband –Piette article count. LParta: Laband –Piette adjusted article count. Pages: page count. LPPag: Laband –Piette page count. LPPaga: Laband –Piette adjusted page count. KMSori: 10 journals of Kalaitzidakis et al. using original (wrong) weights of Kalaitzidakis et al. KMS: 10 journals of Kalaitzidakis et al. using corrected weights. HABM: 24 journals of Hirsch et al. SM: 36 journals of Scott and Mitias. Citescoau: citation count weighted for co-authorship and multiple affiliations. Citescoauyw: citation count weighted for co-authorship, multiple affiliations and differences in years since publication. Cites: citation count.

Table A13: rankcorrelation between methodologies, based on 967 institutions.

	articles	Bauw	Impact	Lpart	Lparta	pages	Lppag	Lppaga	KMSori	KMS	HABM	SM	Cites	Citesco	Citesyw
articles	1.00	0.99	0.94	0.91	0.82	0.99	0.89	0.79	0.66	0.66	0.82	0.85	0.88	0.89	0.91
Bauw	0.99	1.00	0.98	0.96	0.86	0.98	0.93	0.83	0.69	0.70	0.86	0.89	0.92	0.94	0.95
Impact	0.94	0.98	1.00	0.98	0.88	0.93	0.95	0.86	0.72	0.72	0.89	0.91	0.95	0.96	0.97
Lpart	0.91	0.96	0.98	1.00	0.92	0.90	0.98	0.90	0.75	0.76	0.92	0.94	0.94	0.95	0.96
Lparta	0.82	0.86	0.88	0.92	1.00	0.82	0.94	0.98	0.88	0.88	0.90	0.93	0.87	0.87	0.87
pages	0.99	0.98	0.93	0.90	0.82	1.00	0.88	0.79	0.67	0.67	0.81	0.84	0.87	0.88	0.90
Lppag	0.89	0.93	0.95	0.98	0.94	0.88	1.00	0.94	0.80	0.81	0.94	0.96	0.93	0.94	0.94
Lppaga	0.79	0.83	0.86	0.90	0.98	0.79	0.94	1.00	0.91	0.91	0.90	0.93	0.86	0.85	0.86
KMSori	0.66	0.69	0.72	0.75	0.88	0.67	0.80	0.91	1.00	0.99	0.80	0.80	0.72	0.71	0.72
KMS	0.66	0.70	0.72	0.76	0.88	0.67	0.81	0.91	0.99	1.00	0.81	0.81	0.73	0.72	0.73
HABM	0.82	0.86	0.89	0.92	0.90	0.81	0.94	0.90	0.80	0.81	1.00	0.96	0.89	0.89	0.88
SM	0.85	0.89	0.91	0.94	0.93	0.84	0.96	0.93	0.80	0.81	0.96	1.00	0.90	0.90	0.90
Cites	0.88	0.92	0.95	0.94	0.87	0.87	0.93	0.86	0.72	0.73	0.89	0.90	1.00	0.99	0.98
Citesco	0.89	0.94	0.96	0.95	0.87	0.88	0.94	0.85	0.71	0.72	0.89	0.90	0.99	1.00	0.99
Citesyw	0.91	0.95	0.97	0.96	0.87	0.90	0.94	0.86	0.72	0.73	0.88	0.90	0.98	0.99	1.00

Articles: article count. Bauw: article count weighted by Bauwens' weights. Impact: article count weighted by impact factor. LPart: Laband –Piette article count. LParta: Laband –Piette adjusted article count. Pages: page count. LPPag: Laband –Piette page count. LPPaga: Laband –Piette adjusted page count. KMSori: 10 journals of Kalaitzidakis et al. using original (wrong) weights of Kalaitzidakis et al. KMS: 10 journals of Kalaitzidakis et al. using corrected weights. HABM: 24 journals of Hirsch et al. SM: 36 journals of Scott and Mitias. Citescoau: citation count weighted for co-authorship and multiple affiliations. Citescoauyw: citation count weighted for co-authorship, multiple affiliations and differences in years since publication. Cites: citation count.

Table A14: comparison of weights of 10 top journals.

Journal	KMS weights	DV	Correct weights
AER	1	1	1
Econometrica	0.89	0.51	0.626
JPE	0.791	0.36	0.52
QJE	0.645	0.28	0.405
JME	0.593	NA	0.415
JET	0.511	0.23	0.324
RES	0.476	0.38	0.406
REcStat	0.14	0.24	0.195
EJ	0.128	NA	0.099
EER	0.036	NA	0.028

KMS weights: weights used by Kalaitzidakis et al (1999). DV: weights of Dusansky and Vernon (1998). Correct weights: weights of Laband and Piette (1994).

Table A15: The age of the top economists.

	Top 100	top 300	top 1000
Median year of birth	1953(23)	1953(52)	1953(103)
Median year of PHD	1984(82)	1984(218)	1984(430)
Median age at receipt of PHD	27(21)	26.5(50)	27(96)

The number between brackets is the number of observations.

Table A16: the education of the top 100 economists.

	Top 100-BA	#	Top 100-PHD	#	Top 100-current	#
1	U Harvard	7	MIT	23	U Harvard	16
2	MIT	3	U Harvard	12	MIT	10
3	U Bocconi	3	Princeton U	8	U Chicago	6
4	U CA Berkeley	3	U CA Berkeley	7	Princeton U	4
5	U Cambridge	3	U Chicago	7	U PA	4
6	Colorado College	2	U Yale	5	U Yale	4
7	Oberlin College	2	Columbia U	3	UCLA	4
8	Princeton U	2	London School Econ	3	Columbia U	3
9	U Chicago	2	U Cambridge	3	U CA San Diego	3
10	U Oxford	2	U Minnesota	3	Boston College	2

We have info on 67 BA's, 89 PHD's and 94 current employments.

Table A17: the comparison between the different regions, using the top 100.

Region	%BA	%PHD	%employment
US	56.7	87.6	88.4
Europe	25.4	11.2	9.5
Asia	4.5	0.0	0.0
Australia	1.5	0.0	0.0
Canada	7.5	1.1	2.1
Latin America	3.0	0.0	0.0
Middle East	1.5	0.0	0.0

Table A 18: the education of the top 300.

	Top 300-BA	#	Top 300-PHD	#	Top 300-current	#
1	U Harvard	14	MIT	48	U Harvard	28
2	Princeton U	8	U Harvard	30	U Chicago	16
3	U CA Berkeley	7	U Chicago	19	MIT	14
4	U Yale	7	Princeton U	16	Princeton U	14
5	U Cambridge	6	U Stanford	14	U Stanford	9
6	Ecole Polytech.	5	U Ca Berkeley	11	U PA	8
7	U Michigan	5	U Yale	9	U Yale	8
8	McGill U	4	London School Econ	8	Columbia U	7
9	MIT	4	U Minnesota	8	U CA San Diego	7
10	Oberlin College	4	U Cambridge	6	NYU	6

We have info on 190 BA's, 243 PHD's and 266 current employments.

Table A19: comparison between the different regions, using the top 300.

Region	%BA	%PHD	%employment
US	54.7	84.7	78.8
Europe	27.4	13.2	16.3
Asia	5.3	0.0	0.4
Australia	1.6	0.0	0.0
Canada	5.8	2.1	3.8
Latin America	2.6	0.0	0.0
Middle East	2.6	0.0	0.8