

NBER WORKING PAPER SERIES

IT'S GOOD TO BE FIRST:
ORDER BIAS IN READING AND CITING NBER WORKING PAPERS

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ABSTRACT

Choices are frequently made from lists where there is by necessity some ordering of options. In such situations individuals can exhibit both primacy bias towards the first option and recency bias towards the last option. We examine this phenomenon in a particularly interesting context: consumer response to the ordering of economics papers in an email announcement issued by the National Bureau of Economic Research (NBER). Each Monday morning Eastern Standard Time (EST) the NBER issues a “New This Week” (NTW) email that lists all of the working papers that have been issued in the past week. This email goes to more than 23,000 subscribers, both inside and outside academia, and the placement order is based on random factors. We show that despite the randomized list placement, papers that are listed first each week are about 30% more likely to be viewed, downloaded, and cited over the next two years. Lower ranking on the list leads to fewer views and downloads, but not cites; however, there is also some recency bias, with the last paper listed receiving more views, downloads and cites. The results are robust to a wide variety of specification checks and are present for both all viewers/downloaders, and for academic institutions in particular. These results suggest that even among expert searchers, list-based searches can be manipulated by list placement.

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In the canonical economic model, choices are made from sets. However, as emphasized by Rubinstein and Salant (2006), choices are often instead made from lists. This appears to be increasingly true as individuals search for information and goods online where choices are naturally presented as a list. Consumers make fewer and fewer choices in brick and mortar establishments where pairs of goods are naturally compared, but rather in online market places where they are presented with a list of choices from which to pick. Similarly, the practice of going through physical libraries to browse through stacks of books and journals arranged by topic has largely been replaced by searching databases or the web with keywords, and typically selecting from a list of results.

The fact that individuals are choosing from a list raises the distinct possibility that list ordering matters. As Miller and Krosnick (1998) and Mantonakis et al. (2009) argue, in some settings there may be a “primacy effect”, where individuals are biased towards selecting items listed first in a set. This can arise because of fatigue in working one’s way through a list, because of serial-position effects on memory, because initial impressions are most lasting, or simply through “satisficing” behavior when options are considered similar and continued search is at all costly. On the other hand, there may be a “recency” effect biasing towards items later in the list as well, because of biased processing of earlier vs. later information. For example, cognitive fatigue and short-term memory congestion could cause individuals to be less critical in moving their way down a list. Past evidence from a variety of arenas, ranging from multiple choice testing, to elections, to judging contests, to pension fund investments, suggest the presence of both types of effects.

In this paper we revisit list ordering effects in a particularly interesting context: search over research papers. We focus on measures of consumer response to the ordering of economics papers in an email announcement issued by the National Bureau of Economic Research (NBER). The NBER is one of the most prominent non-academic institutional affiliations for economists. The NBER serves as a home for grant making, and runs dozens of conferences each year across the spectrum of economics. It is perhaps best known for its Working Paper series, through which recent economics research is widely disseminated and which remains one of the most visible forms of distribution of cutting edge economics research in the U.S.¹ Each week the NBER typically issues 20 new working papers; while originally distributed in paper form, they are now available (exclusively to individuals) electronically.²

Most importantly for our purposes, each Monday morning Eastern Standard Time (EST) the NBER issues a “New This Week” (NTW) email that lists all of the working papers that have been issued in the past week. This email goes to more than 23,000 subscribers, both inside and outside academia. Papers are listed solely based on the order in which they were received and processed through the various filters that are required of authors (e.g. disclosure of conflicts). Since the order of receipt and the extent of delay is impossible to predict ex-ante, this is a process that is essentially impossible to game. Indeed, the employees responsible for constructing this email view themselves as generating these lists randomly and, as we document below, paper ranking in this email is effectively random with respect to most observable characteristics.

¹ The goal of the NBER working paper series is to “make results of NBER research available to other economists in preliminary form to encourage discussion and suggestions for revision before publication.”

² Paper copies are still available to libraries.

We build a database that matches each week's NTW ranking of papers with information on paper abstract views (hereafter referred to as "hits"), PDF downloads and forward citations. The first two are available over the 2013-2014 period, while for citations we use the 2012-2013 period (to allow citations to accrue). For the first two we are able to separate out academic from non-academic institutions to try to differentiate the expert nature of the view/download.

Our findings are striking: despite the effectively random allocation of papers to the NTW ranking, we find much higher hits, downloads and citations of papers presented earlier in the list. The effects are particularly meaningful for the first paper listed, with a 33% increase in views, a 29% increase in downloads, and a 27% increase in citations from being listed first. For measures of downloads and hits, although not for citations, there are further declines as papers slide down the list. However, the very last position is associated with a boost in views and downloads. The results are robust to a wide variety of specification checks and are present for both all viewers/downloaders, and for academic institutions in particular. These results suggest that even among expert searchers, list-based searches can be manipulated by list placement.

The paper proceeds as follows. Part I briefly reviews the related previous literature. Part II discusses the NBER Working Paper process. Part III describes our data and empirical strategy. Part IV presents the basic results. Part V presents some specification checks to illustrate the robustness of our findings, while Part VI shows some extensions. Part VII concludes.

Part I: Previous Literature

Miller and Krosnick (1998) review evidence for primacy effects in a number of contexts, such as choice of answers in multiple choice testing and preference of food from a set of choices. They also find strong evidence for primacy effects in local elections, with a 2.5% increase in vote share for those listed first; they also suggest that the primacy effect weakens as expertise rises. Danziger et al.'s (2011) study of decision-making by Israeli judges shows that the odds of parole declines as judges move through their list of cases, and then resets when judges come back from a break. And Karlsson et al. (2006) find that individuals choosing where to invest their pension funds are more likely to select investment options reported at the beginning of the menu of funds. On the other hand, several studies of panel decisions in sporting events seem to suggest that options presented at the end of the list fare better, as judges tend to “loosen” standards over time.³ Mantonakis et al. (2009) review studies showing recency effects, and in their study of choice of wine from a list of options finds both primacy and recency effects.

Some previous research finds order effects in scientists' citation behavior. Huang (2014) finds for U.S.-based scientific journals that papers whose primary author's surname (but not later authors' surnames) initials appear earlier in the alphabet get more citations.⁴ Haque and Ginsparg (2009) find that astrophysics and high energy physics papers disseminated on arXiv receive more citations when they appear early in a list of new submissions announcements. But both of these papers suffer from potential manipulation of authors who may anticipate

³ Wilson (1977), Glesjer and Heyndels (2001), Bruine de Bruin (2005) and Ginsburgh and Van Ours (2003).

⁴ See Einav and Yariv (2006) for last name initials and academic success, and Jurajda and Munich (2010) for last name initials and admission to selective schools.

these impacts. In the former case, teams of authors can place the author with an alphabetically-early name as primary author; in the latter case, as the authors acknowledge, the impact is well known and submissions are timed to take advantage of it.⁵

Most related to our work is a recent paper by Novarese and Wilson (2013) that looks at order effects in research paper downloads (but not citations). They find papers randomly listed first in lists of new papers from Research Papers in Economics (RePEc) receive more downloads, and that the effect is stronger when the lists are longer. While they are able to control for list placement, the interpretation of their results is complicated by the fact that papers in these announcements are normally presented in descending order of estimated value, so that there is a natural bias towards primacy effects. We also note that these announcements are not widely read - the average number of downloads in their sample is 5, while in our sample mean downloads is 195. For these reasons the effect of list placement on paper visibility remains an open question.

Part II: The NBER Working Paper Process

Each Monday morning (EST), the more than 23,000 subscribers to the “New this Week” (NTW) email receive that week’s paper listings. Appendix A lists the format for a typical week. Papers are listed in order of working paper number. The top of the email just lists the paper titles and links, while the remainder of the email provides abstracts and links to a web page for that working paper. The link leads directly to the web page specific to that working paper, which includes the abstract and a link to a PDF of the full-text of the paper and other summary

⁵ The authors find an enormous spike in submissions in the minutes after the 4:00 deadline past which papers are selected for the next day’s list. These submissions are thus a highly selected sample of papers submitted to arXiv.

information. While everyone can view the web page, free full-text PDF downloads are restricted to individual and institutional subscribers to the series, corporate associates, journalists, federal government employees and military personnel, and residents of developing countries.⁶ The number of papers per week varies from 7 to 45 each week during the 2013-2014 period, with a mean of 20.3 and a median of 19.5.

The working paper process proceeds as follows. After a paper is submitted to the NBER publications department, the NBER staff check whether a number of criteria are met, including that the paper has not been published elsewhere, that the NBER's disclosure policy has been read by all authors and they have accordingly disclosed sources of research funding and financial relationships that bear on their research, and that the paper does not "make policy recommendations or offer normative judgment about policies".⁷ Once the staff member indicates in the database that these checks have been completed, the paper is then automatically assigned the next available working paper number. Papers are processed in batches between Tuesday to Thursday each week and working papers published by Friday are then included in the email announcement sent out on the following Monday.

As a result of these checks, working papers are not necessarily assigned numbers in the order in which they are submitted. In particular, delays between submission and number assignment have grown in recent years due to a more rigorous disclosure policy. In addition, in some cases, the announcement of a working paper is delayed to a subsequent week after a

⁶ Details available at <http://www.nber.org/help/wp/free.html>

⁷ The submission form for potential working papers with further details about the submission process is available at http://papers.nber.org/wpsubmit/wp_submit.html. The NBER's Disclosure policy is available at <http://www.nber.org/researchdisclosurepolicy.html>

working paper number has been assigned. This occurs, for instance, when authors send a revised file after a number has been assigned but before the email announcement is sent out.⁸

It is true, as we will show below, that ranking is correlated with submission day and with delays from submission. The former is due to the process described above, while the latter is due to the fact that if papers are delayed, they are placed earlier in the queue when they are listed. But there is no evidence that either submission date or delay are in any way chosen strategically by either the NBER or authors. We have the advantage of being able to talk directly with the NBER employee responsible for creating the working paper list. She reports no effort by the NBER to influence placement on the NTW list, and she has never received a single author inquiry about the ranking process or request for list placement. There were a handful of targeted decisions made about which Working Papers would receive particularly notable numbers (e.g. 15,000 or 20,000). But even in these cases there was no effort to influence placement in the NTW list.

One restriction to our data is that only about half the subscribers to NTW get the full list of papers, while the other half select the topics or keywords for which they want notification (see <http://www.nber.org/prefs/notify>). Papers may therefore be ranked higher on a selected list than it is on the general list, but not lower. Unfortunately, we cannot match our outcomes of interest to the rank on the selected list. But the ability to create specialized lists should bias our results downward by creating noise in the true ranking.

⁸ There are a small number of working papers with excessively delays of more than 50 days, presumably due to issues such as the difficulty of obtaining author permissions. We exclude these cases. Including these papers does not weaken our results.

Part III: Data and Empirical Specification

For this project, we have collected the NTW email lists over the past three years.⁹ We match these lists to three outcome variables. The first two are the number of clickthroughs from the link in the NTW email to the paper's web page ("hits") and the number of downloads of the PDF file. Data on these come from 2013-2014 only.

The third dependent variable is the number of citations to the working paper and subsequent versions of the paper. The citations counts were collected from Google Scholar, as other sources such as Web of Science and Scopus do not index working papers. Google Scholar aggregates citations across different versions of the same paper. We use the set of working papers announced in 2012 and 2013 for the citations analysis, as we observe only relatively few citations (yet) for papers listed in the 2014 NTW emails.

Using these data, we run ordinary least squares¹⁰ regressions of the form:

$$(1) \quad \ln(\text{VIEW}_{it}) = \alpha + \beta \cdot \text{RANK}_{it} + X_{it}\delta + \rho_t + \varepsilon_{it}$$

Where i indexes papers and t indexes weeks; VIEW is some measure of the attention paid to the paper, using the three dimensions denoted above; RANK is one of several measures of the paper's ranking in the NTW email; X is a set of paper-specific control variables; and ρ is a set of fixed effects for each calendar week. So this specification allows us to ask: among all papers submitted in the same week, how does the placement in the NTW email influence the attention that is paid to that paper?

⁹ For about 25 papers out of the 1800 that we use for our downloads/clickthrough results, they either did not appear in NTW or we do not have information on where they placed. They are excluded from the analysis.

¹⁰ As a robustness check, we run Poisson Quasi-Maximum Likelihood regressions with similar results.

For controls, we include the number of authors on the paper; log of the number of working paper publications from the most (working paper) published coauthor on the paper; the presence of a “star” co-author, which is defined as having an author with a previous NBER Working paper that was in the top 5% in terms of forward citations (relative to other working papers published in the same year); the number of NBER programs in which the paper is listed¹¹; and a set of dummies for each NBER program in which the paper is listed. In order to control for any potential concerns over endogenous placement, we also include 7 daily dummies for the day of the week on which the paper was submitted (in case authors were trying to find the day of the week that generated highest placement), and the number of days delay (in case authors were hoping to use more delay to generate higher placement).

The means of our data are presented in Table 1 for the 2013-2014 sample (except for citations, which come from the 2012-2013 sample). The typical paper has 921 hits, with 195 downloads and 14 citations by the end of 2014. The typical paper has 2.5 authors, and 5% of papers feature a “star” co-author. The average length of delay is 12 days. Submissions are higher earlier in the week and lowest on the weekends. The programs with the most working papers are Economic Fluctuations and Growth, Labor Studies, and Public Economics.

Part IV: Basic Results

Tables 2 shows our basic results, for hits, paper downloads and citations, respectively, for the effect of being ranked first. Turning first to the control variables, we find that the stock of working papers by the most prolific author leads to more hits and downloads, but not more

¹¹ More information about the NBER research programs is available at <http://www.nber.org/programs/>: “The research activities of the NBER are organized into a series of twenty research programs and fifteen working groups... (which) correspond loosely to traditional fields of study within the field of economics.” Each paper is assigned a program primarily based on the affiliation of the authors (for those with an NBER affiliation).

citations. We find that papers with more authors have fewer hits and fewer downloads, but are cited more often. We find that having a “star” coauthor is the largest and most consistent effect, raising hits, downloads and citations. The number of programs in which the paper is listed also has mixed effects. There is little impact of days of delay on ranking effects.

Turning next to our variables of interest, the most important common finding is a very sizeable positive effect of being ranked first. We find in the second column that being ranked first leads to 33% more hits, 30% more downloads, and 27% more citations. This is a striking effect from random list placement.

Table 3 extends the results to consider other measures of ranking. The first column shows the linear effect of rank. The second column includes both the rank and rank1 included together. The third column includes dummies for being ranked first or second (rank1 and rank2). The fourth column includes a dummy for last rank while the fifth column has both last rank and rank together. Finally, the last column considers three dummies for being in the bottom three quartiles of the list.

Unlike the results for being ranked first, there is more inconsistency across dependent variables for these different measures. The citation regressions find that neither linear rank, nor being ranked second, nor the quartile of ranking, has much effect on citations. The coefficient for last rank is positive but not significant. Thus, beyond being ranked first, we find no clear evidence that other placement on the lists matters for citation counts.

For hits and downloads, however, other elements of list placement matters. For example, the linear rank coefficient is highly significant in the first column, with each spot lower in the rank leading to 1% fewer hits and 0.9% fewer downloads. When rank1 and linear rank are

included together, both are significant and not importantly changed in effects relative to their independent inclusion. When rank2 is included, it is positive but not significant. The results are similar even when rank, rank1 and rank2 are all included.

The very last position is associated with a 10% increase in hits and a 17% increase in downloads. When we control linearly for rank (and hence the tendency for attention to decrease over the list), these effects are even stronger. Indeed, conditioning on rank, the effect of being listed last on downloads is not significantly different from the effect of being listed first. Finally, the results of rank by quartile suggest that there is an insignificant penalty for being in the second quartile, which grows to be sizeable and significant for the third and fourth quartiles.

To summarize, we find that placement on the NTW list has a significant effect on hits, downloads and citations. This is true for all measures for being ranked first: the first ranked paper each week is much more likely to be viewed and cited. For other measures of ranking, there appears to be an effect on hits and downloads, but not on citations.

Part V: Specification Checks

In this section, we provide the results of a number of tests to show the robustness of the striking finding of the effect on NTW list placement. We begin by showing that there are no important correlations between the rank measures and other observable characteristics of working papers. Table 4 shows regressions for paper rank and being ranked first on working paper characteristics for the 2013-2014 sample used for hits and downloads. Paper rank is correlated with day of the week that the paper was submitted; papers submitted on Tuesday-

Thursday have lower ranks. At the same time, papers submitted on Wednesday and Thursday are less likely to be ranked first. There is also a significant impact of delay on ranking or the odds of being ranked first. Importantly, neither day of the week nor delay is meaningfully correlated with citations in Table 2.¹² The variables that are strong predictors of citations, such as whether there is a “star” author or the number of authors on the paper, or the presence in particular NBER programs, are uncorrelated with ranking.

The strong correlation between ranking and delay is a potential source of concern. It is possible, for example, that the most famous authors are the busiest and therefore have the longest delays in their papers, in a manner that is not captured by our “star” measure. As noted, delay is not correlated independently with hits/downloads/citations. Nevertheless, to more precisely address this point, we can restrict the sample only to the first ranked paper and to other papers submitted the exact same day as the first ranked paper. The results of this exercise are shown in the first column of Table 5. This table has rows for each of our three measures (hits, downloads and citations). The regression includes all of the control variables noted earlier, except for delay and day of the week, which is homogenous within this sample.

The results for this small sample show that, if anything, the results are stronger when rank1 papers are compared to papers submitted the same day, using all three dependent variables. The estimate is not significant for citations, but it is highly significant for the other measures.

More generally, one might be concerned that the best papers are being placed towards the top of the list. To address this more explicitly, the next column of Table 5 shows results

¹² As a stricter test, they are not correlated with citations even in regression that exclude the rank measures.

when we restrict the sample only to the first and second ranked papers on the list. If there is a general tendency to put better papers higher on the list, the effects of being ranked first should be mitigated compared to the second ranked paper. This is in fact not the case – the effects are very similar when restricted to this much smaller sample (albeit not significant for citations).

Our final specification check relies on the fact that we also have data available on hits that come from locations other than through link in the NTW email. As shown in Table 1, there is a much larger number of hits that come outside the NTW link itself. For these users, the ranking within the list should not matter – they aren't clicking directly from the NTW list, but are searching on some other criteria.¹³ Therefore, non-NTW hits serve as an excellent proxy for paper quality that is independent of placement on the NTW list. Indeed, there is a very strong correlation between non-NTW hits and hits from NTW emails: one more non-NTW hit is associated with almost 0.3 more hits through the NTW links.

The next two columns of Table 5 replicate our base regressions from Table 2, but include this “quality” measure as an extra control. This measure is only available starting in March, 2013. This means that we cannot use it for the citation measure, and that our sample is somewhat smaller for the hits and downloads analysis. Our main download and hits results are comparable, but about 6% smaller, for this march-forward sample.

Strikingly, adding this excellent proxy for quality does not change our conclusions that being ranked first dramatically increases cites & downloads, and higher ranking reduces both. The coefficient on hits is somewhat smaller than the comparable sample result without the

¹³

control, while the coefficient for downloads is noticeably smaller (but not significantly different). The latter could arise because individuals repeat visit the website using the link from the NTW list to view papers, and these views influence later downloads that do not come directly from the NTW-link. Therefore, including the non-NTW list hits may absorb some of our list ranking effect. In any case, what is most important is that our results still show very sizeable ranking effects even when this measure of paper quality is included, providing further evidence of randomization in list placement and that unobserved paper quality is not driving our findings.

Part VI: What Drives the Rank Effects?

The effects uncovered thus far provide striking evidence that position in the NBER NTW working paper list impacts attention paid to research papers that are otherwise similar. The natural follow-on question is why that is. We consider three possible explanations for this finding in Tables 6a-6c (one table for each of our dependent variables)

First, we can assess whether the finding is due to a lack of attention among non-experts. Perhaps non-academics who receive the NTW email list are not paying much attention to it and so just click on the first paper, but academics who are paying attention don't display such bias. To address this point, we can restrict the analysis solely to those who have the higher education based ".edu" extensions in their email addresses . This allows us to subset on a more "expert" set of readers who should on average have more professional interest in the working paper series.

The first three columns of Tables 6a and 6b show the results for the .edu subsample, for both hits and downloads, for the rank, rank1 and last rank measures (we are unable to refine

citations along this dimension in Table 6c). In every case, as with the larger sample, the effects are highly significant and suggestive that higher ranking on the working paper list leads to more attention. The results are slightly moderated relative to the baseline specifications of table 2 for the effect of rank1: being ranked first leads to a 25.9% increase in hits for the .edu hits, as opposed to 32.8% for all hits; and 23.2% in downloads for the .edu downloads, as opposed to 29.5% for all downloads. For hits, an additional spot downward in the ranking leads to a 0.7% decline for the .edu hits, as opposed to 1% for all hits. However, there is no difference for the effect of rank on downloads; and the effect of being ranked last is actually higher for .edu hits (14.5% versus 10%). Overall, we conclude that expert users of the NTW list do not show meaningfully different responses to ranking of papers on NTW compared to non-experts.

A second explanation is that inattention is driven by longer lists. If readers of the lists have a fixed attention span, then they may be less willing to peruse a list that is longer than one that is shorter; this implies that a NTW list that has a larger number of entries will deter search throughout the list, and that the difference between the first rank and other placements will be more pronounced.

To address this point, we include in our regressions an interaction of our rank measures with an indicator for whether the list is above median length (more than 20 papers).¹⁴ We show the results for each of our three measures in columns (4)-(6) of Tables 6a-6c. We find positive interactions between first rank and length of the list, although the effect is significant only for downloads. The interactions between long list and rank, as well as those between long list and last rank are not significant.

¹⁴ Since all regressions have week fixed effects, the main effect of long list is absorbed into the week fixed effects.

A third model is that limited attention is driven by the attractiveness of the first option. That is, perhaps individuals have a stopping rule that is based on how interested they are in the first paper on the list; if the first paper is particularly attractive, then they are more interested in perusing other papers on the list. To test this alternative, we rate the “quality” of the first option on the NTW list by whether it has a “star” author (as defined previously). We then ask: does the favoritism of higher ranked papers weaken when the top paper is by a star author?

We test this hypothesis in three ways in columns (7)-(9) of Tables 6a-6c. First, we interact the dummy for being the second ranked paper with an indicator for a star author on the first paper. Here we find that there is indeed a negative coefficient: the favoritism of the second ranked paper that we saw earlier is mitigated when the first ranked paper has a star author. Second, we interact linear rank with the dummy indicating whether the first paper has a star author. Here, the results are mixed: the coefficient is positive for downloads (indicating that the penalty for being a lower ranked paper is reduced), but it is negative for the other measures. Finally, we interact the dummy for being ranked last with the first paper star measure. The results here uniformly indicate that the favoritism of the last paper is reduced when the first paper is by a star author. Thus, the evidence is suggestive that having a star author of the first paper impacts search behavior, but unfortunately none of the interactions of interest are significant.

Overall, we find little support for the possibility that the results are driven by non-experts. But we do find some evidence that inattention is driven by longer lists, and that the quality of the first ranked paper impacts search behavior.

Part VII: Conclusions

The NBER New This Week email list represents a canonical example of choice from lists of the type that is prevalent in on-line search. We find that search from this list shows strong primacy effects, whereby papers displayed earlier on the list are viewed, downloaded and cited more often than are other papers, as well as some recency effects, with the last paper also being more frequently viewed and downloaded. We argue that this is completely independent of paper quality, and employ a variety of tests to demonstrate this case. Both the primacy and recency effects are present for more and less expert users of the email list, with some evidence that both the length of the list and the quality of the first paper listed impacts search behavior.

These findings confirm that presentation order can be a powerful determinant of choice in a list-based environment – and that this can have strong downstream effects, such as through paper citations in our sample. This suggests that those designing choice mechanisms in a list-based environment consider mechanisms to counteract any such bias; for example, presentation order to those considering goods online could be randomized. At a minimum, decision support tools may want to incorporate this bias into their efforts to provide for the best possible choice for individuals in these environments.

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Tables

Table 1. Means and standard deviations

	Mean	Standard Deviation
Abstract Views (“Hits”)	921.18	724.00
Paper Downloads	195.40	645.01
Citations*	13.58	27.34
Number of Previous WPs (Max)	18.31	19.21
Author Count	2.51	1.01
Star Author	0.049	0.216
Days of Delay	11.97	5.06
Number of NBER Programs	2.11	1.22
<i>Submission Day</i>		
Submitted Monday	0.19	0.39
Submitted Tuesday	0.20	0.40
Submitted Wednesday	0.18	0.38
Submitted Thursday	0.17	0.37
Submitted Friday	0.15	0.36
Submitted Saturday	0.06	0.24
Submitted Sunday	0.06	0.24
<i>NBER Program</i>		
Aging	0.06	0.24
Asset Pricing	0.11	0.31
Corporate Finance	0.10	0.30
Children	0.08	0.26
Development of the American Economy	0.07	0.25
Development	0.13	0.33
Education		
Environmental and Energy	0.07	0.26
Economics		
Economic Fluctuations and Growth	0.22	0.41
Health Care	0.07	0.26
Health Economics	0.11	0.31
International Finance and Macroeconomics	0.10	0.30

Industrial Organization	0.09	0.28
International Trade and Investment	0.07	0.25
Law and Economics	0.05	0.22
Labor Studies	0.22	0.41
Monetary Economics	0.11	0.31
Public Economics	0.21	0.41
Political Economy	0.07	0.26
Productivity, Innovation and Entrepreneurship	0.09	0.29
<hr/>		
Number of Observations	2110	

Notes: The sample is the set of Working Papers appearing in the “New This Week” Email Bulletin during the period January 2013-December 2014.

* for citations, the figure is for papers in the bulleting from January 2012-December, 2013.

Table 2. Basic Results

	<i>Hits</i>	<i>Downloads</i>	<i>Cites</i>
	(1)	(2)	(3)
Ranked First	0.328** (0.066)	0.294** (0.083)	0.269* (0.130)
Number of WP (max)	0.004** (0.001)	0.004** (0.001)	-0.000 (0.002)
Star Author (top 5% cites)	0.294** (0.056)	0.324** (0.074)	0.514** (0.133)
No. Authors	-0.059** (0.013)	-0.033+ (0.018)	0.054* (0.022)
No. Programs	0.033 (0.034)	-0.040 (0.038)	0.071 (0.060)
Delay (Days)	0.007* (0.003)	0.004 (0.004)	0.004 (0.006)
<i>Submission Day</i> (Sunday omitted)			
Monday	-0.002 (0.053)	0.004 (0.085)	-0.050 (0.108)
Tuesday	0.031 (0.055)	0.056 (0.089)	0.024 (0.107)
Wednesday	0.005 (0.055)	-0.017 (0.082)	-0.032 (0.114)
Thursday	-0.002 (0.060)	0.042 (0.093)	0.046 (0.117)
Friday	-0.076 (0.055)	-0.084 (0.093)	-0.026 (0.100)
Saturday	-0.071 (0.066)	-0.027 (0.101)	-0.060 (0.155)
<i>NBER Program</i> (Public Economics omitted)			
Aging	-0.077 (0.064)	0.133 (0.094)	-0.212+ (0.114)
Asset Pricing	-0.061 (0.048)	-0.004 (0.060)	0.204+ (0.106)
Children	0.191** (0.062)	0.200* (0.078)	0.076 (0.116)
Corporate Finance	-0.071 (0.043)	0.021 (0.057)	0.187+ (0.106)
Development	-0.066 (0.049)	0.084 (0.075)	-0.013 (0.097)
Development of the American Economy	-0.037 (0.049)	0.090 (0.061)	-0.391** (0.103)
Education	0.221**	0.233**	0.088

	(0.058)	(0.084)	(0.108)
Economic Fluctuations and Growth	0.210 ^{**}	0.328 ^{**}	0.200 [*]
	(0.052)	(0.055)	(0.081)
Environmental and Energy Economics	-0.137 [*]	0.096	0.152
	(0.056)	(0.084)	(0.114)
Health Care	-0.004	0.108	0.085
	(0.060)	(0.079)	(0.116)
Health Economics	0.015	0.028	-0.369 ^{**}
	(0.059)	(0.074)	(0.090)
Industrial Organization	-0.128 [*]	-0.098	-0.078
	(0.056)	(0.067)	(0.109)
International Finance and Macroeconomics	0.080 ⁺	0.249 ^{**}	0.035
	(0.043)	(0.064)	(0.092)
International Trade and Investment	0.111 ^{**}	0.431 ^{**}	0.434 ^{**}
	(0.042)	(0.075)	(0.118)
Labor Studies	0.249 ^{**}	0.320 ^{**}	0.069
	(0.046)	(0.063)	(0.103)
Law and Economics	-0.093	-0.119	-0.219 ⁺
	(0.078)	(0.079)	(0.122)
Monetary Economics	0.109 [*]	0.261 ^{**}	0.359 ^{**}
	(0.044)	(0.065)	(0.107)
Political Economy	0.148 [*]	0.213 [*]	-0.043
	(0.059)	(0.088)	(0.127)
Productivity, Innovation and Entrepreneurship	0.076	0.116 ⁺	0.156
	(0.053)	(0.068)	(0.103)
Constant	6.408 ^{**}	4.309 ^{**}	1.514 ^{**}
	(0.059)	(0.092)	(0.120)
Nb. of Observations	2,110	2,110	2,018
Nb. of Weeks	104	104	104

Notes: Columns 1 and 2 include Working Papers appearing in the “New This Week” Email Bulletin during the period January 2013- December 2014 and column 3 during the period January 2012- December 2013. Estimation is by OLS and robust standard errors are in parentheses. All regressions include week fixed effects.

⁺ $p < 0.10$, ^{*} $p < 0.05$, ^{**} $p < 0.01$

Table 3. Other Measures of Ranking

	(1) Rank	(2) Rank1 & Rank	(3) Rank1 & Rank2	(4) Last Rank	(5) Last Rank & Rank	(6) Rank Quartiles
<i>A. Hits</i>						
Rank1		0.328** (0.065)	0.354** (0.068)			
Rank	-0.010** (0.002)	-0.011** (0.002)			-0.013** (0.002)	
Rank2			0.091** (0.063)			
Last Rank				0.100* (0.043)	0.178** (0.047)	
Rank Quartile 2						-0.051 (0.042)
Rank Quartile 3						-0.108* (0.047)
Rank Quartile 4						-0.121** (0.042)
Number Obs	2,110	2,110	2,110	2,110	2,110	2,110
<i>B. Downloads</i>						
Rank1		0.295** (0.083)	0.330** (0.087)			
Rank	-0.009** (0.003)	-0.008* (0.003)			-0.012** (0.003)	
Rank2			0.121 (0.082)			
Last Rank				0.168* (0.079)	0.239** (0.079)	
Rank Quartile 2						0.029 (0.058)
Rank Quartile 3						-0.008 (0.059)
Rank Quartile 4						-0.043 (0.063)
Number Obs	2,110	2,110	2,110	2,110	2,110	2,110

<i>C. Citations</i>						
Rank1		0.270*		0.293*		
		(0.129)		(0.135)		
Rank	0.007 ⁺		0.007 ⁺		0.006	
	(0.004)		(0.004)		(0.005)	
Rank2				0.084		
				(0.130)		
Last Rank				0.102	0.065	
				(0.107)	(0.115)	
Rank						0.053
Quartile 2						(0.081)
Rank						0.104
Quartile 3						(0.077)
Rank						0.112
Quartile 4						(0.080)
Number Obs	2,018	2,018	2,018	2,018	2,018	2,018

Notes: Panels A and B include Working Papers appearing in the “New This Week” Email Bulletin during the period January 2013- December 2014 and Panel C during the period January 2012- December 2013. Estimation is by OLS and robust standard errors are in parentheses. All regressions include week fixed effects.

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table 4. Observable Determinants of Ranking

	(1) Rank 1	(2) Linear Rank
Prev. WPs (Max)	-0.000 (0.000)	0.007 (0.008)
Star Author (top 5% cites)	0.008 (0.022)	0.050 (0.604)
No. Authors	-0.004 (0.004)	-0.029 (0.139)
No. Programs	-0.008 (0.010)	0.373 (0.288)
Delay (Days)	0.022** (0.001)	-0.901** (0.074)
<i>Submission Day (Sunday omitted)</i>		
Monday	0.026+ (0.015)	0.124 (0.528)
Tuesday	-0.026 (0.016)	-2.649** (0.678)
Wednesday	-0.047* (0.019)	-3.118** (0.557)
Thursday	-0.041* (0.017)	-1.881** (0.606)
Friday	-0.022 (0.017)	-0.162 (0.488)
Saturday	-0.033+ (0.020)	0.243 (0.572)
<i>NBER Program (Public Economics omitted)</i>		
Aging	-0.005 (0.019)	-1.286* (0.548)
Asset Pricing	0.017 (0.017)	-0.161 (0.410)
Children	0.037 (0.025)	-0.559 (0.566)
Corporate Finance	0.004 (0.017)	-0.944* (0.412)
Development	0.032+ (0.016)	-0.476 (0.427)
Development of the American Economy	0.013 (0.018)	0.209 (0.536)
Education	0.037+ (0.021)	0.283 (0.552)
Economic Fluctuations and Growth	0.001 (0.015)	-0.502 (0.430)
Environmental and Energy Economics	0.031	-0.241

	(0.019)	(0.459)
Health Care	-0.014	-0.439
	(0.020)	(0.507)
Health Economics	0.014	-0.655
	(0.019)	(0.588)
Industrial Organization	0.044 [*]	0.251
	(0.020)	(0.545)
International Finance and Macroeconomics	-0.014	-0.689 ⁺
	(0.014)	(0.380)
International Trade and Investment	-0.013	-0.362
	(0.013)	(0.449)
Labor Studies	0.008	-1.011 ^{**}
	(0.018)	(0.371)
Law and Economics	0.013	-0.365
	(0.022)	(0.561)
Monetary Economics	0.004	-0.321
	(0.018)	(0.500)
Political Economy	0.016	-0.210
	(0.020)	(0.481)
Productivity, Innovation and Entrepreneurship	0.017	0.146
	(0.018)	(0.442)
Constant	-0.188 ^{**}	23.990 ^{**}
	(0.021)	(0.803)
<hr/>		
Nb. of Observations	2,110	2,110
Nb. of Weeks	104	104

Notes: Regressions include Working Papers appearing in the “New This Week” Email Bulletin during the period January 2013- December 2014. Estimation is by OLS and robust standard errors are in parentheses.

⁺ $p < 0.10$, ^{*} $p < 0.05$, ^{**} $p < 0.01$

Table 5. Specification Tests

	(1)	(2)	(3)	(4)
	Same Day as Rank1 Paper	Rank1 & Rank2 Only	Control for non- NTW hits	Control for non- NTW hits
<i>A. Hits</i>				
Rank1	0.553** (0.139)	0.367** (0.099)	0.267** (0.057)	
Rank				-0.009** (0.002)
Non-NTW hits (log)			0.288** (0.015)	0.290** (0.058)
Number Obs	142	196	1941	1941
<i>B. Downloads</i>				
Rank1	0.804** (0.136)	0.347** (0.112)	0.196** (0.063)	
Rank				-0.008** (0.003)
Non-NTW hits (log)			0.480** (0.023)	0.482** (0.023)
Number Obs	142	196	1941	1941
<i>C. Citations</i>				
Rank1	0.434 (0.303)	0.304 (0.193)		
Number Obs	146	191		

Notes: Panels A and B include Working Papers appearing in the “New This Week” Email Bulletin during the period January 2013 - December 2014 (column 1 and 2 in panel A and B); March 2013- December 2014 (column 3 and 4 in panel A and B), and January 2012- December 2013 (Panel C). Estimation is by OLS and robust standard errors are in parentheses. All regressions include week fixed effects.

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table 6a. Investigating Source of Results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	.edu extensions		Interact with List > 20			Interact with paper1 = star			
<i>A. Hits</i>									
Rank1	0.259**			0.252**					
	(0.073)			(0.078)					
Rank		-0.007**			-0.008 ⁺			-0.011**	
		(0.002)			(0.004)			(0.002)	
Rank2							0.008		
							(0.063)		
Last Rank			0.145**			0.128 ⁺			0.111*
			(0.053)			(0.068)			(0.044)
Rank1*Long				0.147					
				(0.113)					
Rank*Long					-0.003				
					(0.004)				
Last Rank *Long						-0.052			
						(0.087)			
Rank*Star								-0.001	
								(0.010)	
Rank2*Star							-0.211		
							(0.200)		
Last Rank* Star									-0.158
									(0.154)

Table 6b. Investigating Source of Results continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	.edu extensions		Interact with List > 20			Interact with paper1 = star			
<i>B. Downloads</i>									
Rank1	0.232** (0.008)			0.152 (0.103)					
Rank		-0.008* (0.003)			-0.000 (0.007)			-0.009** (0.003)	
Rank2							0.061 (0.080)		
Last Rank			0.171* (0.094)			0.263+ (0.134)			0.178* (0.083)
Rank1*Long				0.276+ (0.147)					
Rank*Long					-0.010 (0.007)				
Last Rank *Long						-0.177 (0.164)			
Rank*Star								0.041 (0.024)	
Rank2*Star							-0.493 (0.436)		
Last Rank* Star									-0.111 (0.227)

Table 6c. Investigating Source of Results continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	.edu extensions			Interact with List > 20			Interact with paper1 = star		
	<i>C. Citations</i>								
Rank1				0.208 (0.165)					
Rank					0.009 (0.008)			0.007 ⁺ (0.004)	
Rank2							0.016 (0.132)		
Last Rank						0.021 (0.144)			0.120 (0.111)
Rank1*Long				0.136 (0.215)					
Rank*Long					-0.001 (0.008)				
Last Rank*						0.177 (0.201)			
Rank*Star								-0.001	
Rank2*Star							-0.010 (0.199)	(0.033)	
Last Rank*									-0.343
Star									(0.210)

Notes: Panels A and B include Working Papers appearing in the “New This Week” Email Bulletin during the period January 2013- December 2014 and Panel C during the period January 2012- December 2013. Estimation is by OLS and robust standard errors are in parentheses. All regressions include week fixed effects.

⁺ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Appendix: Sample NTW Email from February 9, 2015

THE LATEST WORKING PAPERS
National Bureau of Economic Research
February 9, 2015

The following NBER Working Papers that match your selections were released in electronic format during the last week.

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1. The Maturity and Payment Schedule of Sovereign Debt
by Yan Bai, Seon Tae Kim, Gabriel P. Mihalache #20896 (IFM)
http://papers.nber.org/papers/W20896?utm_campaign=ntw&utm_medium=email&utm_source=ntw
 2. The Power of Transparency: Information, Identification Cards and Food Subsidy Programs in Indonesia
by Abhijit Banerjee, Rema Hanna, Jordan C. Kyle, Benjamin A. Olken, Sudarno Sumarto #20923 (DEV PE POL)
http://papers.nber.org/papers/W20923?utm_campaign=ntw&utm_medium=email&utm_source=ntw
 3. Voting on Prices vs. Voting on Quantities in a World Climate Assembly
by Martin L. Weitzman #20925 (EEE)
http://papers.nber.org/papers/W20925?utm_campaign=ntw&utm_medium=email&utm_source=ntw
 4. Disaster Risk and its Implications for Asset Pricing
by Jerry Tsai, Jessica A. Wachter #20926 (AP EFG)
http://papers.nber.org/papers/W20926?utm_campaign=ntw&utm_medium=email&utm_source=ntw
 5. Patient Responses to Incentives in Consumer-directed Health Plans: Evidence from Pharmaceuticals
by Peter J. Huckfeldt, Amelia Haviland, Ateev Mehrotra, Zachary Wagner, Neeraj Sood #20927 (HC HE)
http://papers.nber.org/papers/W20927?utm_campaign=ntw&utm_medium=email&utm_source=ntw
 6. Behavioral Economics and Public Policy: A Pragmatic Perspective

by Raj Chetty #20928 (AG LE LS PE)

http://papers.nber.org/papers/W20928?utm_campaign=ntw&utm_medium=email&utm_source=ntw

7. Childhood Medicaid Coverage and Later Life Health Care Utilization

by Laura R. Wherry, Sarah Miller, Robert Kaestner, Bruce D. Meyer #20929 (CH HC HE PE)

http://papers.nber.org/papers/W20929?utm_campaign=ntw&utm_medium=email&utm_source=ntw

8. State Capitalism vs. Private Enterprise

by Donghua Chen, Dequan Jiang, Alexander Ljungqvist, Haitian Lu, Mingming Zhou #20930 (CF LE)

http://papers.nber.org/papers/W20930?utm_campaign=ntw&utm_medium=email&utm_source=ntw

9. Networks, Shocks, and Systemic Risk

by Daron Acemoglu, Asuman Ozdaglar, Alireza Tahbaz-Salehi #20931 (EFG)

http://papers.nber.org/papers/W20931?utm_campaign=ntw&utm_medium=email&utm_source=ntw

10. Veterans' Labor Force Participation: What Role Does the VA's Disability Compensation Program Play?

by Courtney Coile, Mark Duggan, Audrey Guo #20932 (AG HE LS PE)

http://papers.nber.org/papers/W20932?utm_campaign=ntw&utm_medium=email&utm_source=ntw

11. The International Transmission of Credit Bubbles: Theory and Policy

by Jaume Ventura, Alberto Martin #20933 (EFG)

http://papers.nber.org/papers/W20933?utm_campaign=ntw&utm_medium=email&utm_source=ntw

12. The National Rise in Residential Segregation

by Trevon Logan, John Parman #20934 (DAE)

http://papers.nber.org/papers/W20934?utm_campaign=ntw&utm_medium=email&utm_source=ntw

13. Premature Deindustrialization

by Dani Rodrik #20935 (DEV EFG ITI PR)

http://papers.nber.org/papers/W20935?utm_campaign=ntw&utm_medium=email&utm_source=ntw

14. Collective Action: Experimental Evidence
by Maria Victoria Anauati, Sebastian Galiani, Gustavo Torrens, Brian Feld #20936 (DEV)
http://papers.nber.org/papers/W20936?utm_campaign=ntw&utm_medium=email&utm_source=ntw

15. Racial Disparities in Savings Behavior for a Continuously Employed Cohort
by Kai Yuan Kuan, Mark R. Cullen, Sepideh Modrek #20937 (AG PE)
http://papers.nber.org/papers/W20937?utm_campaign=ntw&utm_medium=email&utm_source=ntw

16. Age, Cohort and Co-Authorship
by Daniel S. Hamermesh #20938 (LS)
http://papers.nber.org/papers/W20938?utm_campaign=ntw&utm_medium=email&utm_source=ntw

17. Measuring Job-Finding Rates and Matching Efficiency with Heterogeneous Jobseekers
by Robert E. Hall, Sam Schulhofer-Wohl #20939 (EFG LS)
http://papers.nber.org/papers/W20939?utm_campaign=ntw&utm_medium=email&utm_source=ntw

18. The Impact of Intergroup Contact on Racial Attitudes and Revealed Preferences
by Scott E. Carrell, Mark Hoekstra, James E. West #20940 (ED LS PE)
http://papers.nber.org/papers/W20940?utm_campaign=ntw&utm_medium=email&utm_source=ntw

19. Is Sniping A Problem For Online Auction Markets?
by Matthew Backus, Tom Blake, Dimitriy V. Masterov, Steven Tadelis #20942 (IO)
http://papers.nber.org/papers/W20942?utm_campaign=ntw&utm_medium=email&utm_source=ntw

20. The Internationalization of the RMB, Capital Market Openness, and Financial Reforms in China
by Joshua Aizenman #20943 (IFM)
http://papers.nber.org/papers/W20943?utm_campaign=ntw&utm_medium=email&utm_source=ntw

21. The Impact of War on Resource Allocation: 'Creative Destruction' and the American Civil War
by B. Zorina Khan #20944 (DAE POL PR)
http://papers.nber.org/papers/W20944?utm_campaign=ntw&utm_medium=email&utm_source=ntw

22. 'To Have and Have Not': Are Rich Litigious Plaintiffs Favored in Court?

by B. Zorina Khan #20945 (DAE DEV LE POL)

http://papers.nber.org/papers/W20945?utm_campaign=ntw&utm_medium=email&utm_source=ntw

23. Facilitating Savings for Agriculture: Field Experimental Evidence from Malawi

by Lasse Brune, Xavier Gine, Jessica Goldberg, Dean Yang #20946 (DEV)

http://papers.nber.org/papers/W20946?utm_campaign=ntw&utm_medium=email&utm_source=ntw

24. Fraudulent Income Overstatement on Mortgage Applications during the Credit Expansion of 2002 to 2005

by Atif R. Mian, Amir Sufi #20947 (AP CF EFG ME)

http://papers.nber.org/papers/W20947?utm_campaign=ntw&utm_medium=email&utm_source=ntw