

The Effect of Open Access Mandate Strength on Deposit Rate and Latency

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Introduction

Twenty years ago, it was proposed that all researchers should make their refereed research journal articles freely accessible on the Web (Open Access, OA) to maximize their uptake and impact (Harnad, 1995). Access-denial because of the high cost of journal subscriptions is a major obstacle to the progress of research. The two ways to make research OA are by depositing in online repositories ("green OA") or by publishing in OA journals ("gold OA") (Gargouri *et al.*, 2012).

Twenty years after the OA proposal, the low rate of spontaneous deposit has demonstrated that merely inviting deposit is not enough. Authors are afraid of their publishers, to whom they have usually transferred their rights in exchange for publication. It has therefore become clear that universities and research funders need to adopt OA mandates that require their researchers to deposit. To measure the effectiveness of these mandates, a Spanish service called MELIBEA, has ranked and weighted OA mandates according to their specific requirements, and assigned them an overall score for strength.

Data

Databases

- **Registry of OA Repositories (ROAR):** list of repositories, <http://roar.eprints.org>
- **Registry of OA Repositories Mandatory Archiving Policies (ROARMAP):** list of mandates, <http://roarmap.eprints.org>
- **Thomson-Reuters/ISI Web of Science (WoS):** Index of publications for 2011-2013, <http://apps.webofknowledge.com>
- **MELIBEA:** Policy information, <http://accesoabierto.net/politicas>

Independent variables

- **MELIBEA overall score:** derived from weighted policy requirements
- **Requirement to deposit for institution-internal use of deposited material** (with vs. without)
- **Required time of deposit** (upon acceptance vs. upon publication vs. unspecified)

Dependent variables

- **Public Access (PA) deposits:** deposits with unrestricted public access online
- **Restricted Access (RA) deposits:** deposits with no public access until embargo period ends
- **Deposit latency:** delay between time of deposit and time of publication (i.e., deposit date minus publication date)

Method

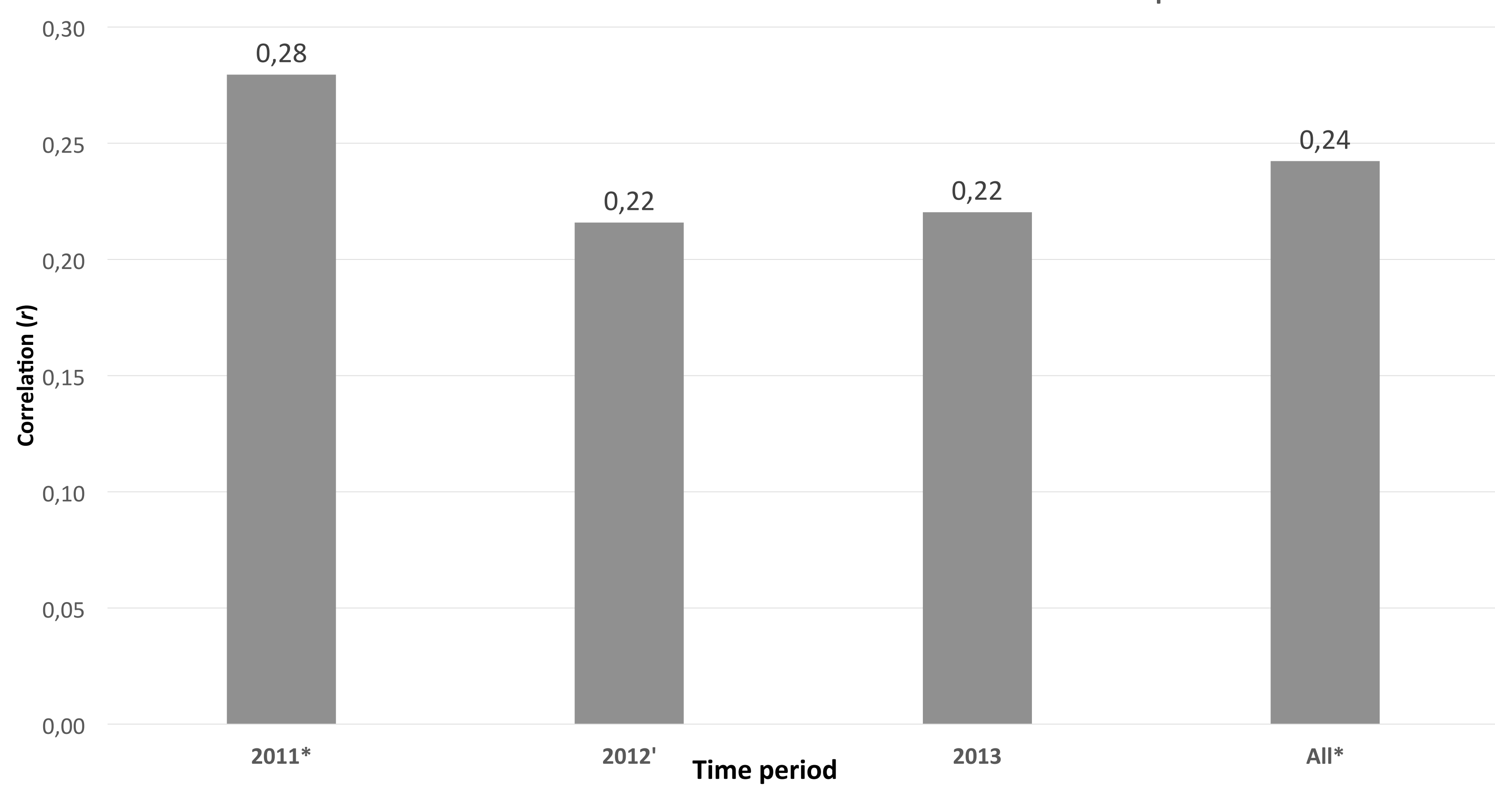
We used data from the Registry of OA Repositories (ROAR), the Registry of OA Repository Mandatory Archiving Policies (ROARMAP), the Thomson-Reuters/ISI Web of Science (WoS) index of articles 2011-13 for all authors in institutions with OA mandates and the MELIBEA mandate parameters and overall score. The databases were accessed with a crawler to determine what percentage of each institution's WoS-indexed articles was deposited in its repository, and when. We calculated the **deposit date** and **deposit latency** (delay between the date of publication and the date of deposit) for Public Access (PA) deposits, Restricted Access (RA) deposits and non-deposits for publication years 2011, 2012 and 2013.

Deposit latency was normally distributed, so t-tests could be used to test the significance of observed effects, but because deposit rate (for RA, PA and PA+RA) was not normally distributed, permutation tests were used to test for statistically significant effects.

Results

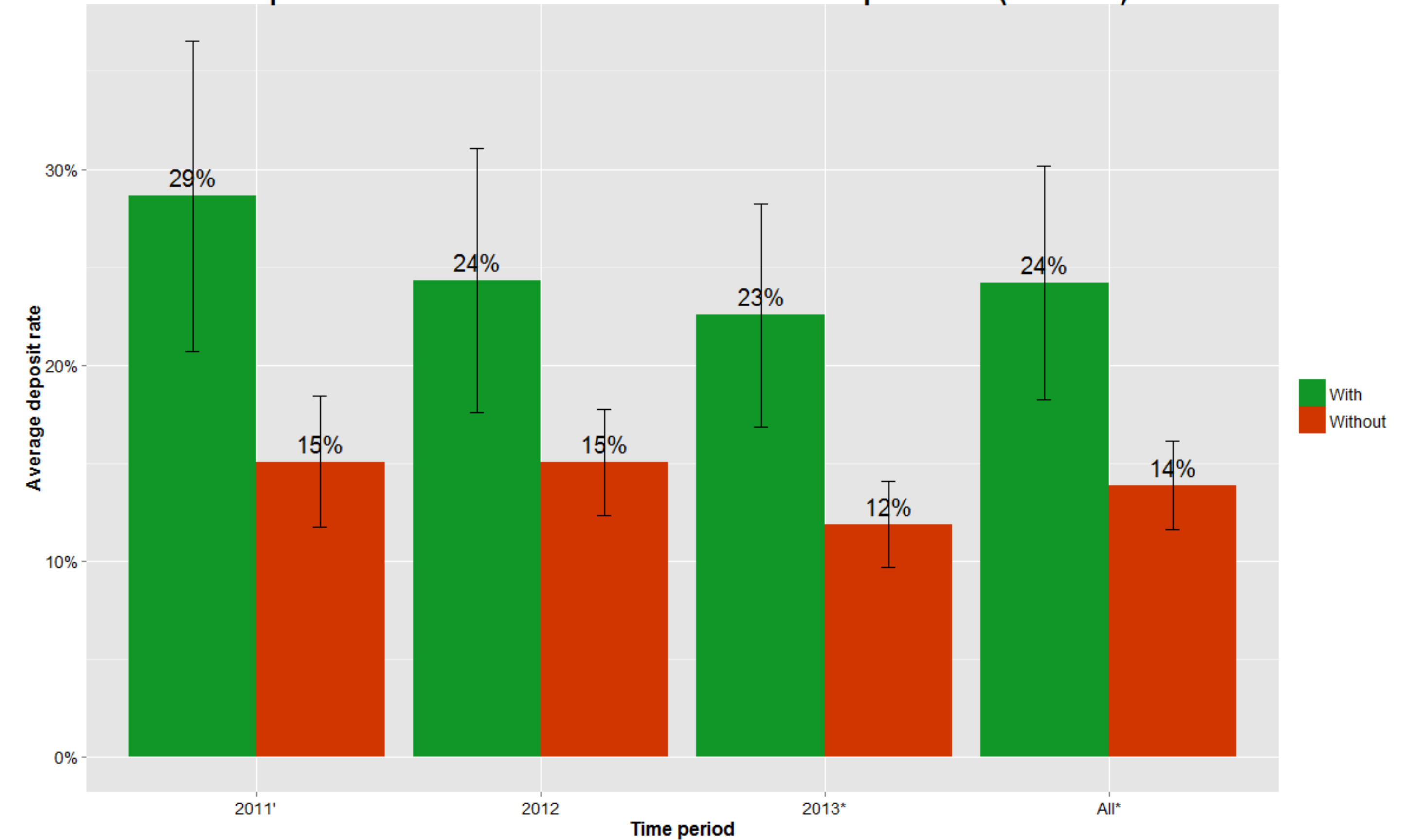
There is a weak but significant positive correlation ($p < 0.05$) between the MELIBEA overall weighted score for mandate strength and the PA deposit rate. Analyzing the source of this correlation in the individual requirements in which the policies differed, we found that if the policy stipulates that deposit is mandatory "For internal use" (e.g., research performance evaluation) deposit rate is significantly higher for PA and RA combined ($p < 0.05$); deposit latency for PA alone is also significantly shorter ($p < 0.05$). Finally, if the policy requires that the deposit must be done "At time of acceptance," deposit rate is significantly higher for combined PA and RA deposits, compared to requiring deposit "At time of publication" or "Unspecified." This effect is significant only for 2011 ($p < 0.05$) and almost significant for all years combined.

Correlation Between MELIBEA score and PA Deposit Rate

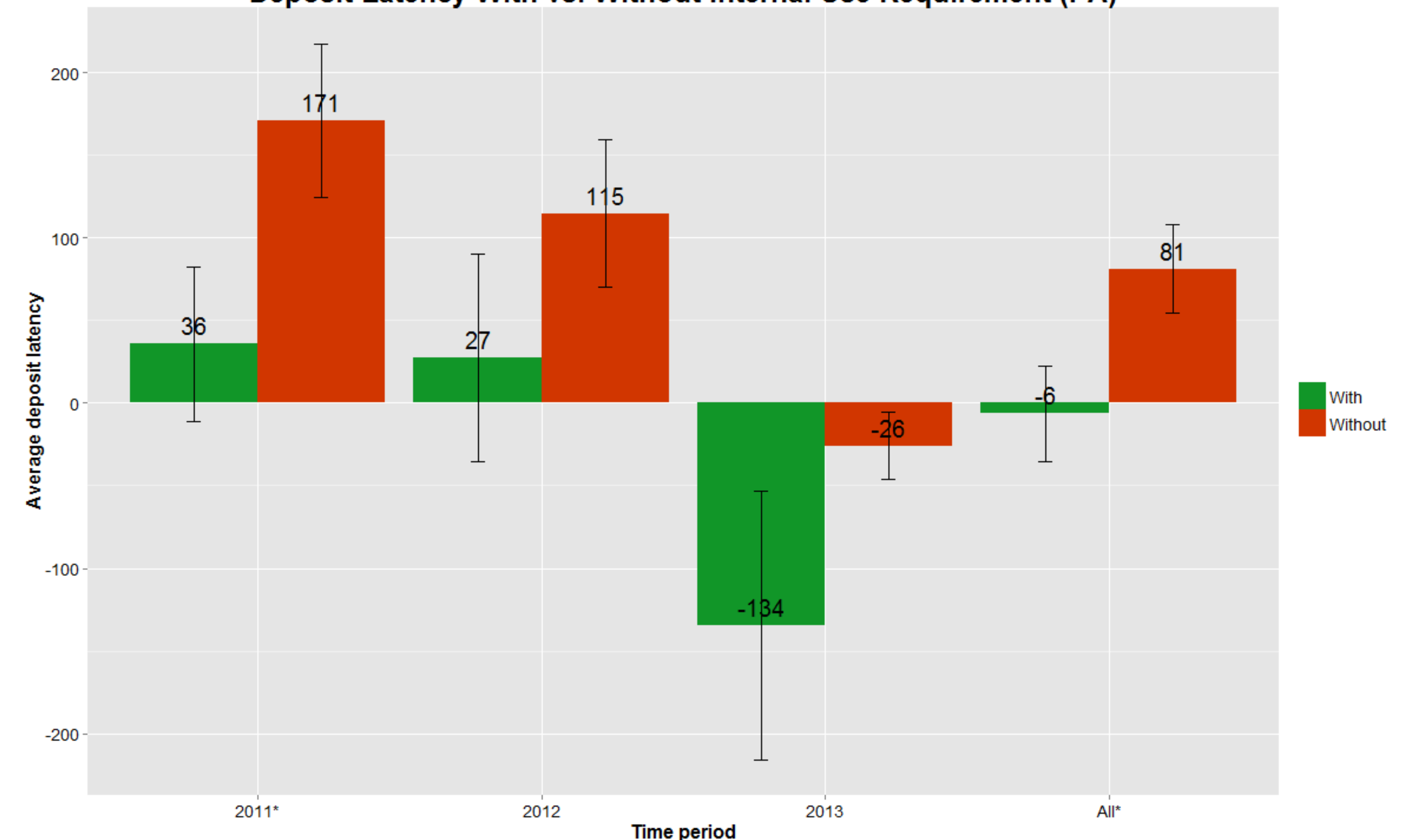


Results

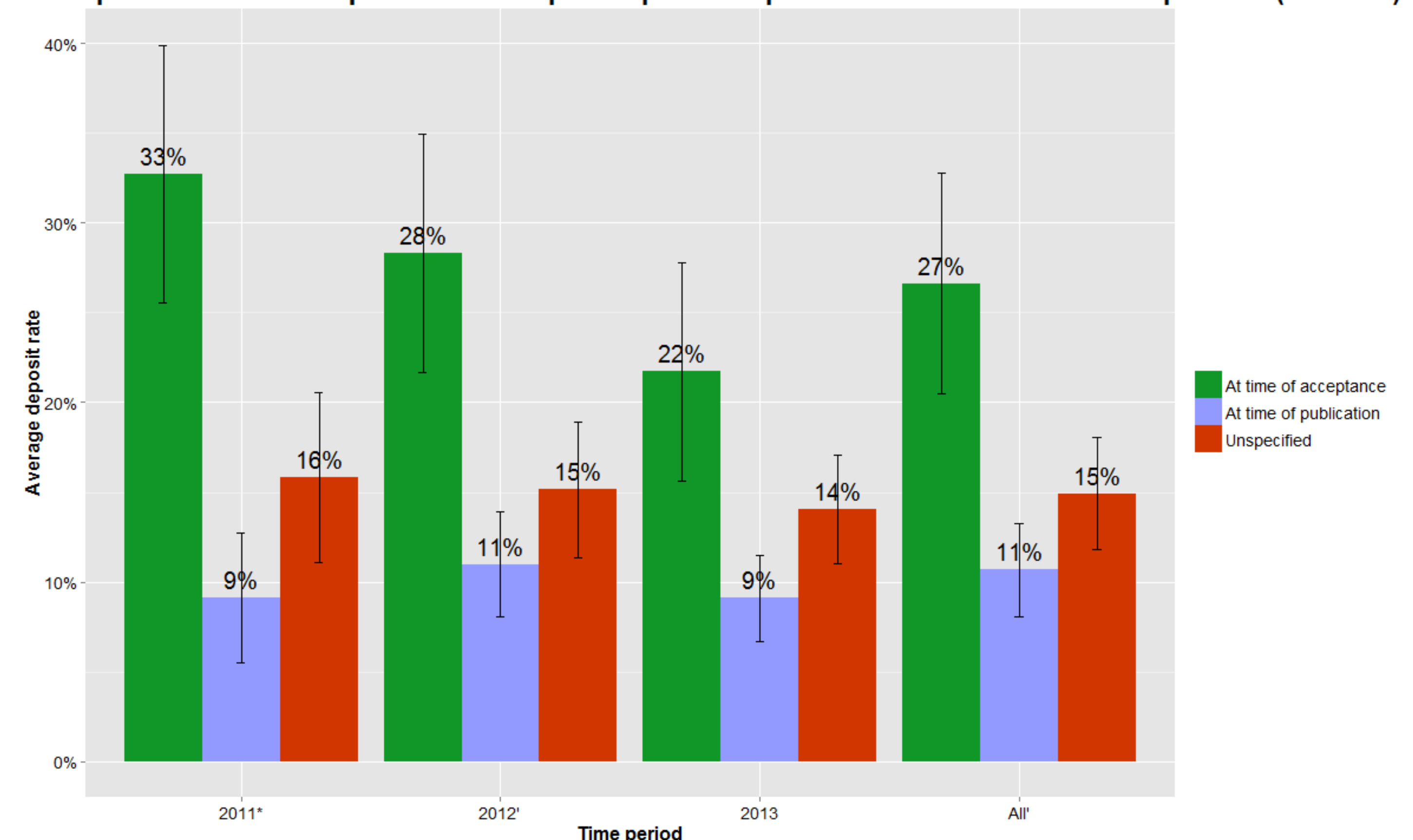
Deposit Rate With vs. Without Internal Use Requirement (PA + RA)



Deposit Latency With vs. Without Internal Use Requirement (PA)



Deposit Rate With Requirement to Deposit Upon Acceptance vs. Publication vs. Unspecified (PA + RA)



Discussion

Precious research usage and impact are lost whenever a finding is not made OA at all, or when it is made OA later rather than earlier. Stronger mandates increase deposits and reduce the delay between publication and deposit. These findings are important because just the demonstrated benefits of OA alone (increased usage and citations, Gargouri *et al.*, 2010) have not proved enough to induce most authors to provide OA unmandated. Mandates are now being adopted worldwide, but many of them are too weak. Our findings suggest that to be effective, mandates need to require deposit immediately upon acceptance, as well as to make immediate deposit a precondition for internal uses such as research performance evaluation.

References

- Gargouri, Y., Hajjem, C., Larivière, V., Gingras, Y., Carr, L., Brody, T., & Harnad, S. (2010). Self-selected or mandated, open access increases citation impact for higher quality research. *PLoS one*, 5(10). <http://dx.plos.org/10.1371/journal.pone.0013636>
- Gargouri, Y., Larivière, V., Gingras, Y., Carr, L., & Harnad, S. (2012). Green and gold open access percentages and growth, by discipline. <http://eprints.soton.ac.uk/340294/>
- Harnad, S. (1995) A Subversive Proposal. In: Ann Okerson & James O'Donnell (Eds.) *Scholarly Journals at the Crossroads; A Subversive Proposal for Electronic Publishing*. Washington, DC., Association of Research Libraries, June 1995. <http://www.arl.org/scomm/subversive/toc.html>