The Rules of Standard Setting Organizations

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This paper

- Empirically examines the rules of standard setting bodies.
- Motivated by framework in Lerner-Tirole [2004].
- But also extensions.
- Finds patterns generally consistent with theory.

Model examines general problem

- Owner of idea or property must convince potential buyers or adopters of its value.
- Will turn to (at least somewhat) independent certifiers.
- Examples:
  - Academics submit works to journals.
  - Authors seek publishers for books.
  - Companies hire investment banks for new issues.
  - Technology developers turn to SSOs.

Three key actors

- Sponsor of prospective standard:
  - Will get profit π if standard is adopted.
- The SSO:
  - Objective function is $U+\alpha\pi$, where α in $[0,\infty)$.
    - The α shaped by voting rules, board composition, reputational concerns, and nature of users.
    - Low α: SSO with user orientation.
    - High α: SSO with sponsor orientation.
- Users:
  - Will get utility U if standard adopted.
  - Will only adopt if U appears to be >0.

Concessions

- In actuality, sponsor can make—or SSO require—various concessions:
  - E.g., royalty-free and RAND requirements regarding I.P.
  - Binding dispute resolution.
- Concessions c will make standard more attractive to users.

Concession strategy

- Under SSO free entry, the weaker the proposed standard:
  - The more credible the SSO chosen.
  - The more extensive the concessions.
  - Negative correlation between α and c.

Extension: Limited competition

- Previous, assumption of "free entry."
- Now consider setting where limited number of SSOs:
  - Must distinguish between *ex ante* rules (analytical focus) and *ex post* actions.
  - Suggests weaker relationship between α and c in this setting:
    - Sponsor-friendly SSOs tempted to demand substantial concessions and therefore attract weak standards.
    - User-friendly SSOs tempted to make weak demands so as to appeal to sponsors with stronger technologies.

Extension: Disclosure

- Essential trade-off:
  - Absence of disclosure raises fear of sponsor hold-up once users have invested:
    - Missing piece of intellectual property needed for the most effective implementation of the technology.
  - But without worries, sponsor would prefer not to disclose applications or technological strategies.
- Within an equilibrium, a lower permitted licensing price is associated with less disclosure.

Overview of empirical analysis

- Seek to test predictions of model:
  - Will focus here on relationship between
    - α (extent of sponsor orientation on part of the SSO) and
    - c (concessions required of users).
  - Expect a negative correlation.
  - Examine relationship for technologies with small and large number of SSOs.
  - Also relationship between disclosure and licensing rules.

Empirical approach

- Identify 59 SSOs with detailed information on Internet.
- Compile information on workings of voting, board, disclosure, licensing, etc. from:
  - Web site.
  - ISO database.
  - Survey.
- Use proxies for α and c.

Proxies for α

- Is organization a SIG (rather than an SSO)?
- Are all members corporations?
- Does organization rely on majority rule (as opposed to consensus or supermajority rules)?
- Was organization established recently?

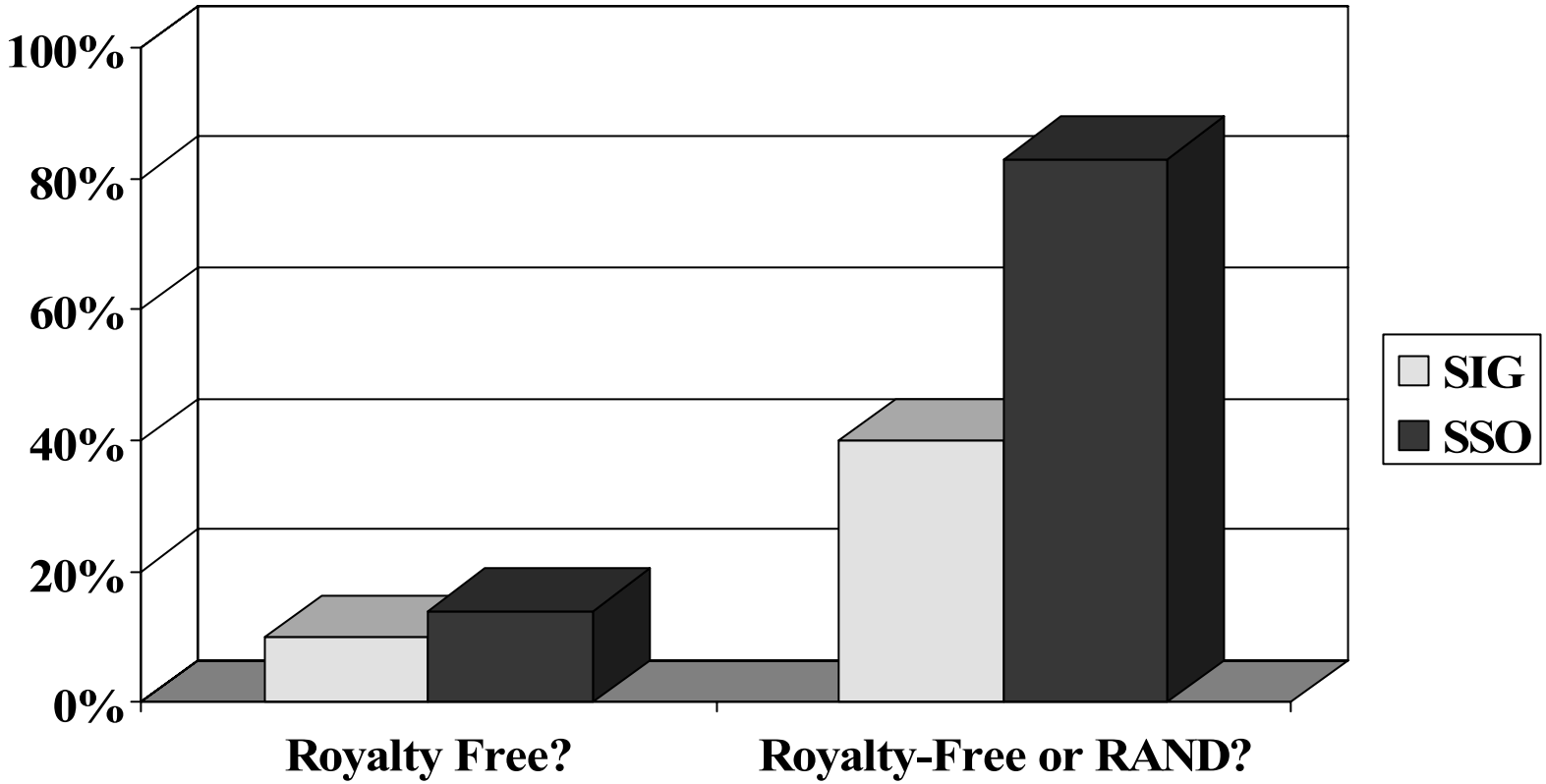
Proxies for c

- Do firms commit to royalty-free licensing?
- Do firms commit to royalty-free or RAND licensing?
- Is there a binding dispute resolution?

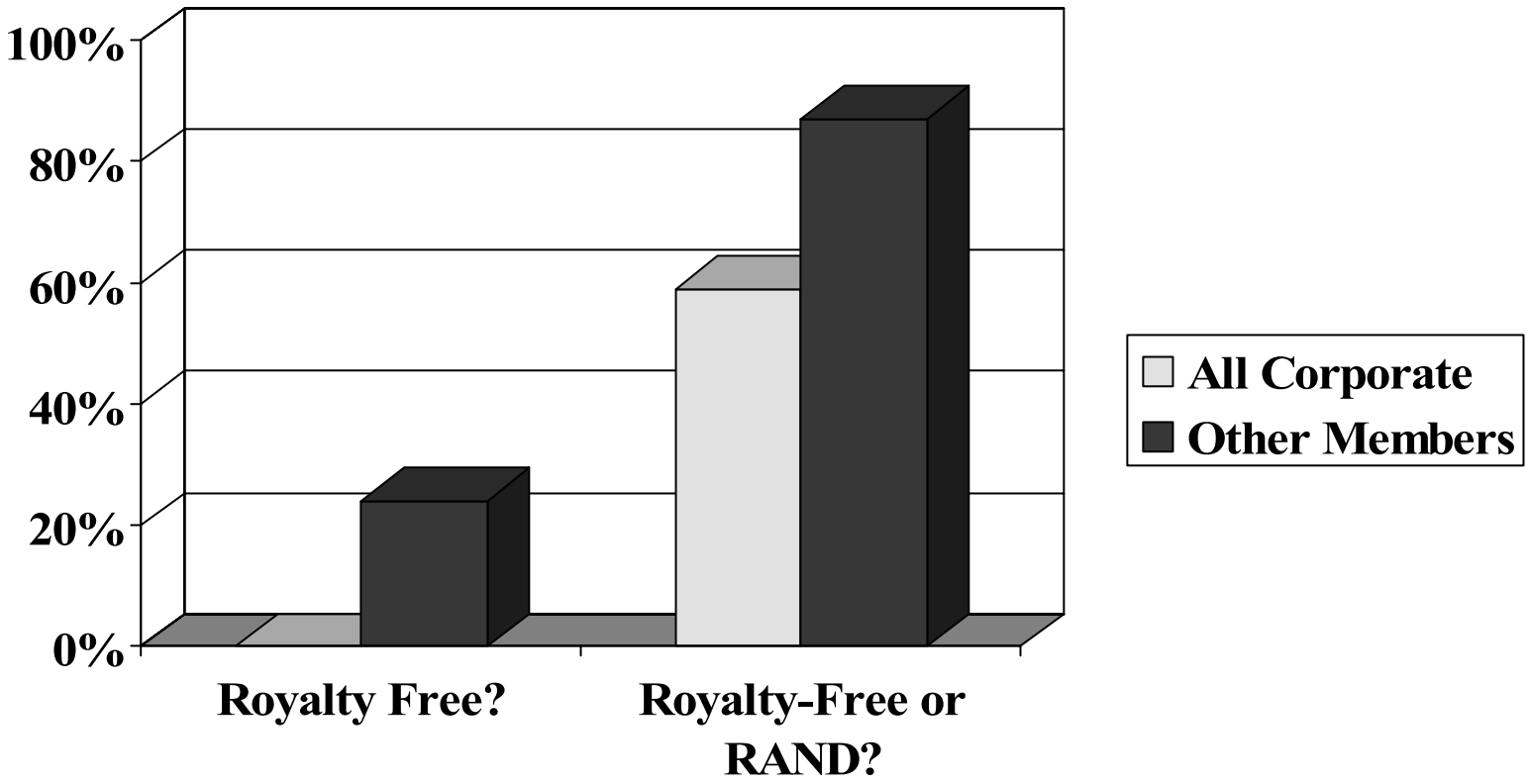
Results

- Cross tabulations: negative association between proxies of α and proxies of *c*.
- Correlation of " α-score" and "*c*-score" very economically and statistically significantly negative.
- Relationship considerably tighter when many SSOs in category.
- Differing disclosure requirements with licensing rules.

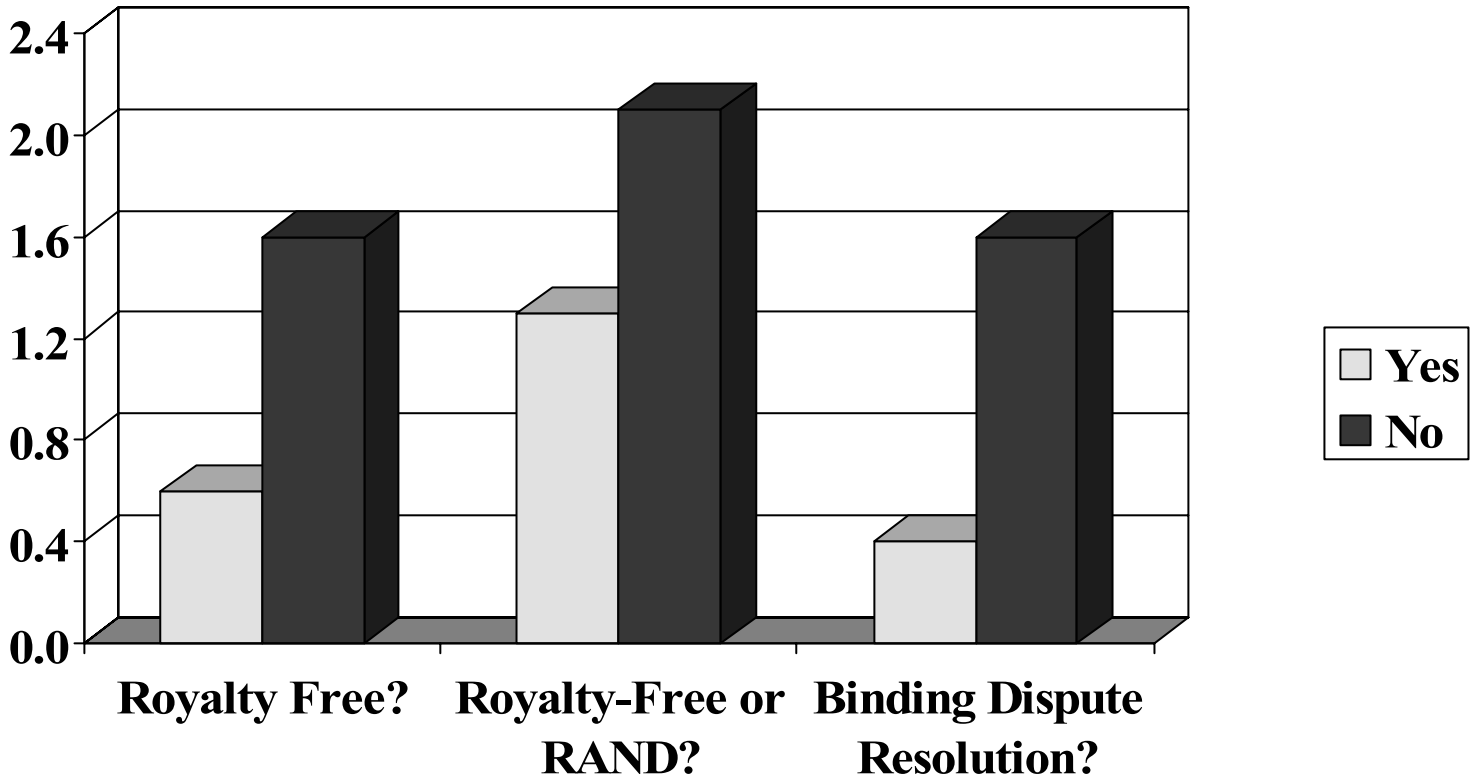
Cross-tabs: Organization type



Cross-tabs: Membership



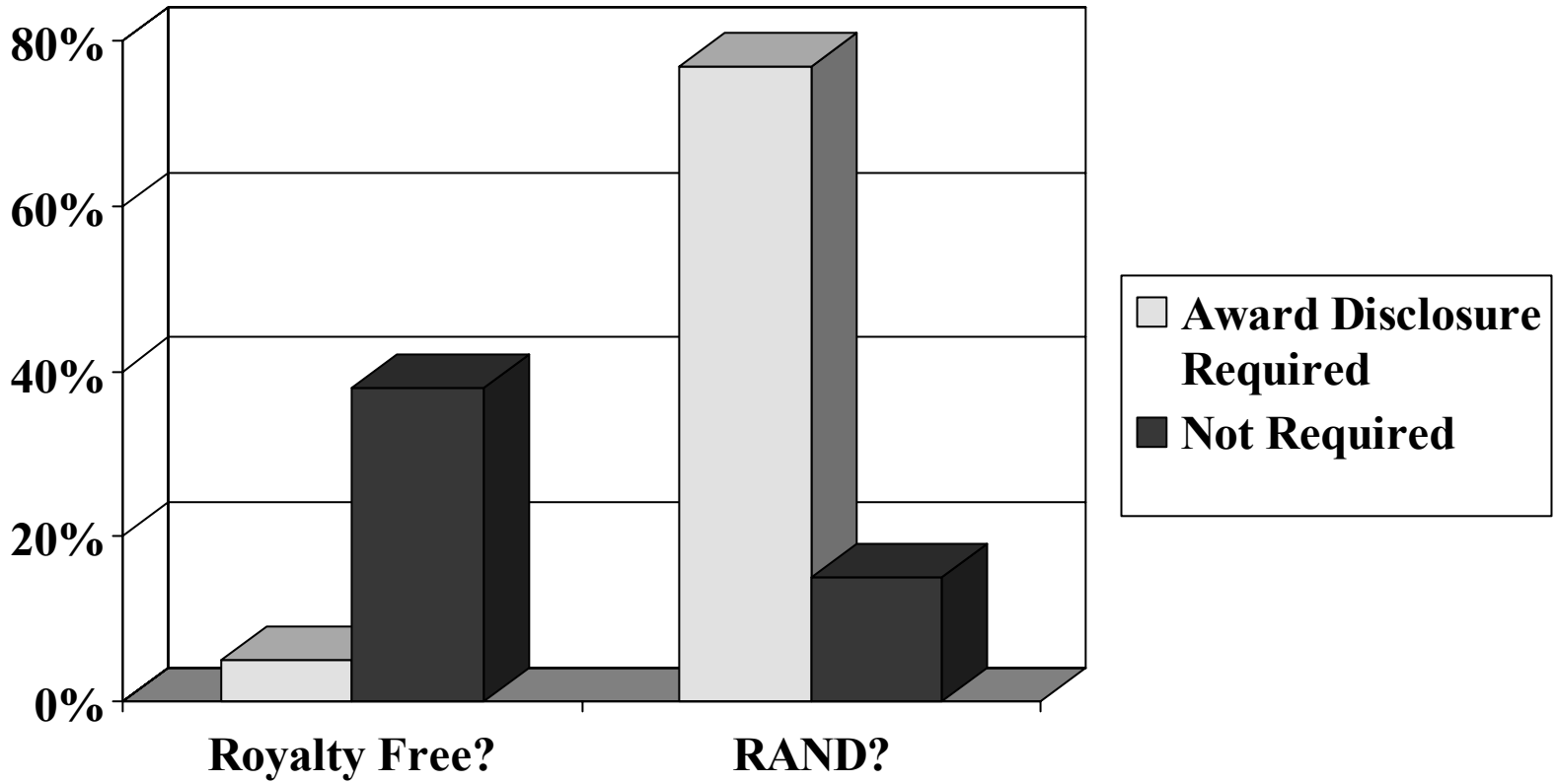
Alpha score vs. c score elements



Regressions with above and below median SSO density in category

	> Median	*< Median*
SIG?	-2.2 [1.1]*	-35.8 [229.0]
All Corporate?	-2.4 [1.1]**	-1.6 [1.1]
Majority Rule?	-0.4 [1.0]	-1.4 [1.2]
Younger SSO?	-2.1 [1.1]*	-0.6 [0.9]
χ^2/p-Value	15.69/0.008	12.91/0.074
Log Likelihood	-17.85	-22.51

Cross-Tabs: Disclosure



Wrapping up

- Look at rules governing 59 SSOs.
- Consistent with theory:
  - Negative relationship between α and c.
  - More pronounced with more SSOs in category.
  - Lesser disclosure requirements when lower permitted licensing price..