

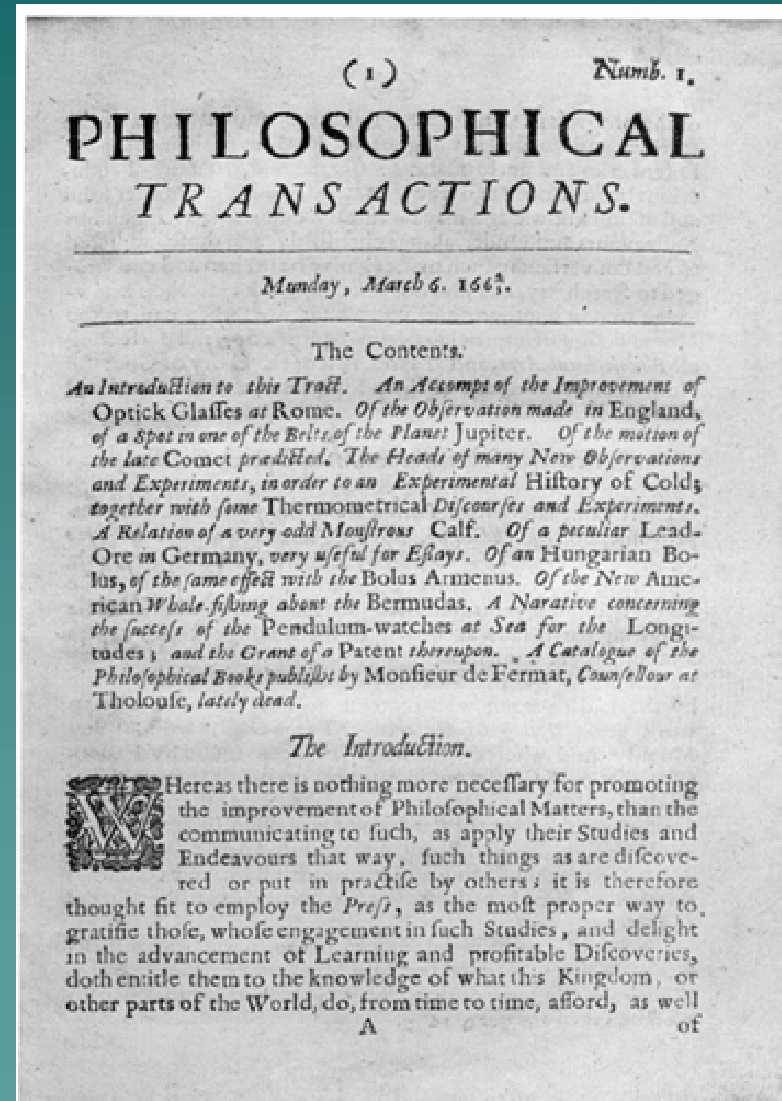
Self-citations and impact factors of Croatian journals

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Scholarly publishing

- ◆ There are currently 20,000 peer-reviewed journals of scientific and scholarly research worldwide, publishing over 4 million articles per year



Scholarly associations

- not for profit
- building community of researchers
- trying to produce high-quality, low-cost journals
- primary originator for scholarly communication
- some associations have outsourced publishing process to commercial companies

Commercial publishers

- developed in response to overflow of articles submitted for publication
- maximize profit by raising institutional prices (200-500% increase in journal cost over last 15 years)
- authors give up copyright
- paradox: from disseminators they turn into preventor of access to scientific information
- e-environment even fasten their positions, power and profit

Bibliographic databases

- ◆ collecting data from thousands of journals
- ◆ libraries, professional societies, commercial publishers
- ◆ selection criteria introduced by ISI make their databases very popular and heavily used
- ◆ citation databases are still unique

“The basic mission of ISI as a database publishing company is to provide comprehensive coverage of the world's most important and influential research.”

Web of Science

- ◆ ISI covers 8,700 “*most important and influential*” international journals
- ◆ complete bibliographic data for every item is indexed, including English-language author abstracts, author and publisher addresses, **as well as the cited references of every journal.**

Impact factor definition

$$IF = C/N$$

- ◆ where N= the number of papers published in the journal in the **previous two years**, C= the number of citations of the above papers received in the **current year**
- ◆ i.e., the measure of the frequency with which the “average article” in a journal has been cited in a particular year
- ◆ reflects journal’s relative importance in the subject area

Criteria for promotion and tenure

- ◆ **judgments of the peers**, letters from leaders in the field
- ◆ **research productivity**: papers in peer-reviewed journals, papers in prestigious journals, frequency of publication, focusing on at least one area, other types of publications (books)
- ◆ **impact of research**: **citations, journal rankings (high-impact factor journals)**, invited talks and lectures (international conferences and institutions)
- ◆ **teaching** and service contributions

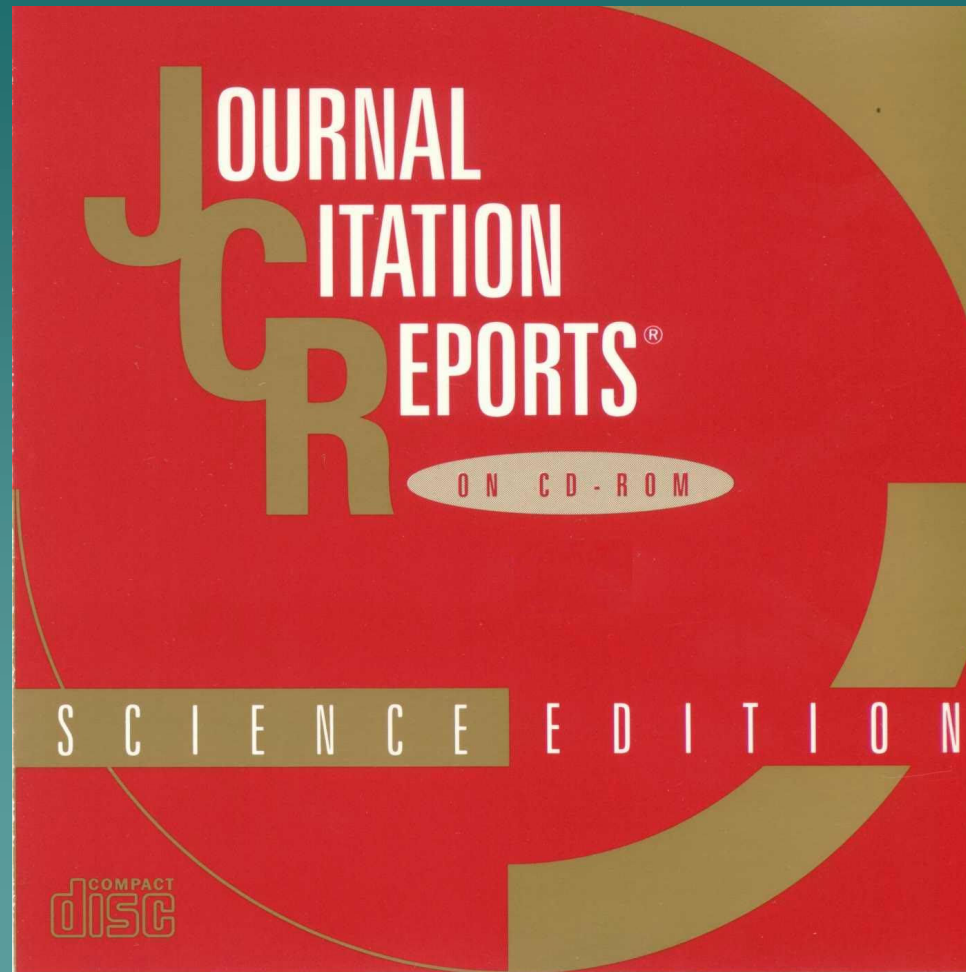
journal IF - issues

- ◆ is it the two-year citation “window” enough for all fields, e.g. social sciences and humanities?
- ◆ does “papers” mean same thing in numerator and denominator?
- ◆ is the mean of the distribution of citations the most appropriate parameter (what about percentage of articles that are uncited?)
- ◆ is IF influenced by
 - “document type”?
 - number of papers published?

IF critiques by Seglen (1997)

- ◆ the journal's impact factor is not necessarily representative of the individual journal articles
- ◆ citations to "non-citable" items are erroneously included in ISI's database
- ◆ review articles are heavily cited and inflate the impact factor of some journals
- ◆ **selective journal self-citation: articles tend to preferentially cite other articles from the same journal**
- ◆ coverage of ISI's database is not complete, and not all excluded journals are irrelevant
- ◆ database has an English-language bias
- ◆ database is dominated by American publications
- ◆ the impact factor is highly dependent on the number of references per article in the research field
- ◆ small research fields tend to lack journals with high impact factor but may publish articles with high scientific or practical impact

JCR (Thomson ISI)



- ◆ JCR Science Edition – 5876 journals
- ◆ JCR Social Science Edition – 1770 journals

JCR journal description

- ◆ citation and article counts (original res. and rev. art.)
- ◆ impact factor
- ◆ immediacy index
- ◆ cited half-life
- ◆ citing half-life
- ◆ source data listing (non-review articles and review articles: articles and reference items counts)
- ◆ citing journal listing
- ◆ cited journal listing
- ◆ subject categories (170)
- ◆ publisher information
- ◆ journal title changes

JCR applications

◆ Authors

- identify journals in which to publish, confirm status of journals in which they have published, identify journals relevant to their research

◆ Librarians

- tool for the management of library journal collections, budget for subscriptions

◆ Editors

- assess effectiveness of editorial policies and objectives, track standing of their journals

◆ Publishers

- positioning their journals in relation to the competition, identify new publishing opportunities, make decisions regarding current publications

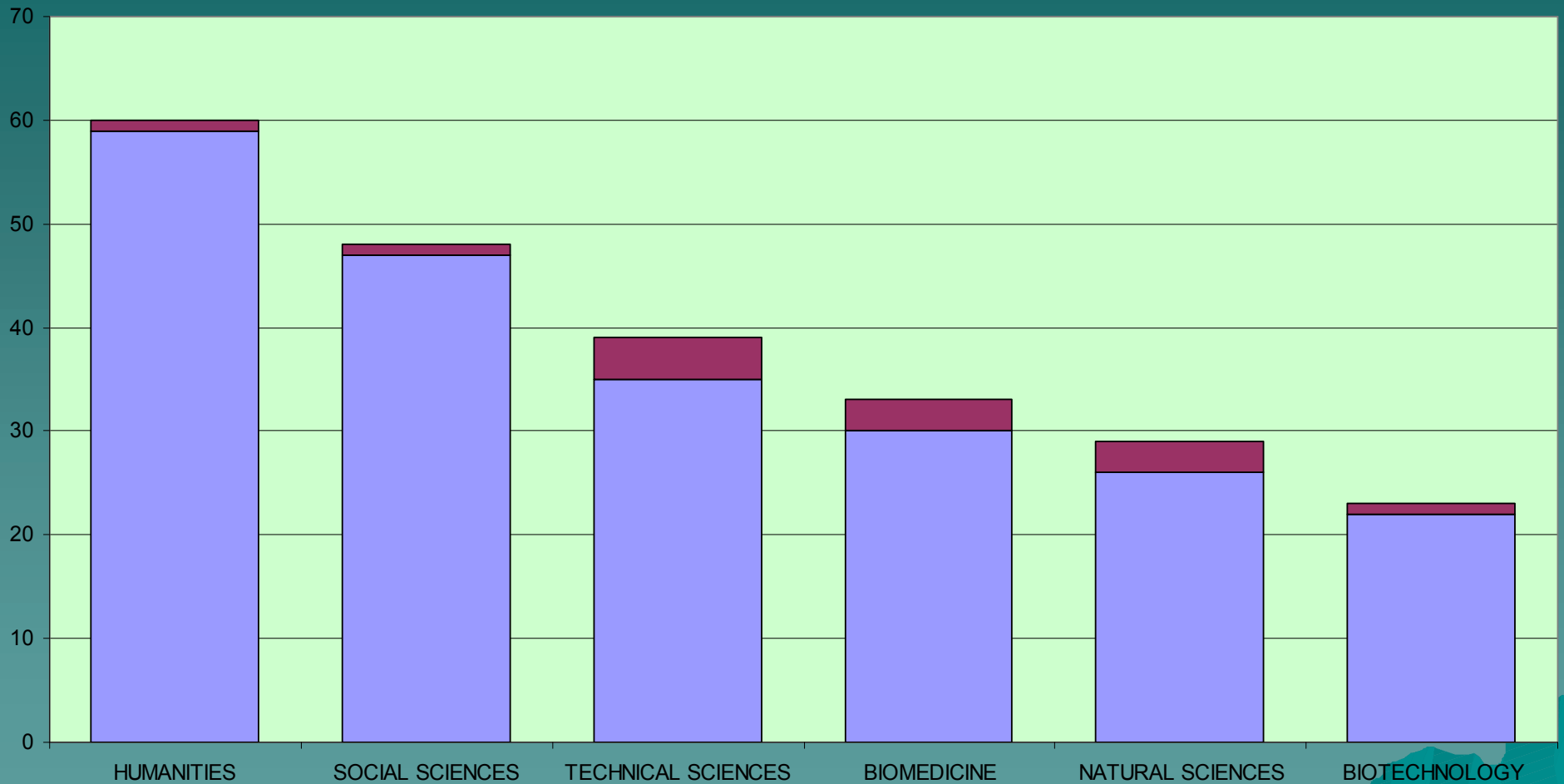
◆ Information Analysts

- track bibliometric trends, study citation patterns within and across disciplines

◆ the most important and recent use is in the process of academic evaluation

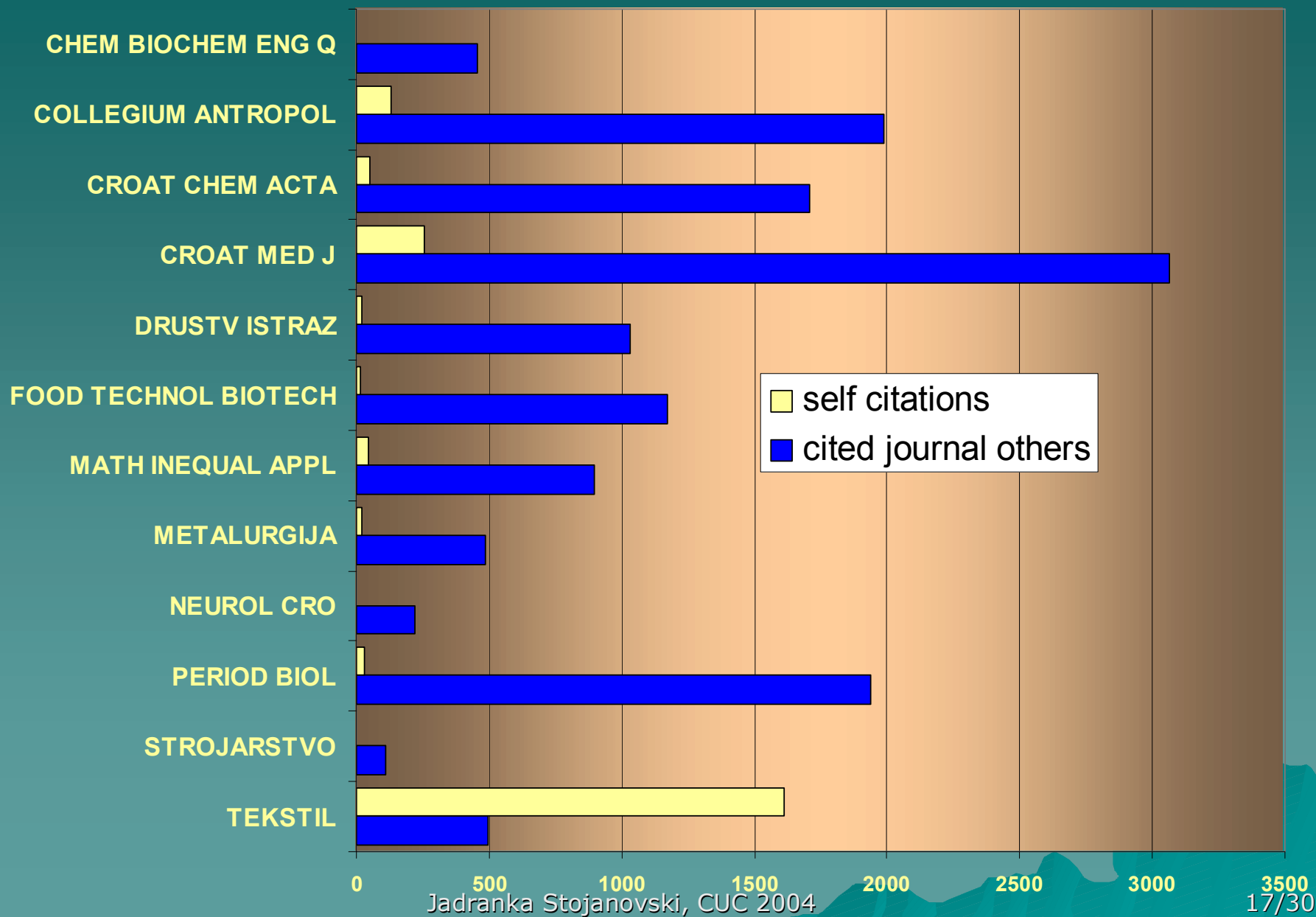
- ◆ is it citedness reflecting properly level of quality, importance, influence, performance, relevance, informativeness, citation - worthiness, popularity, goodness of the paper?

**LOCAL JOURNALS #FIELD (TOTAL 232)
only 5.6% are included in ISI publications**

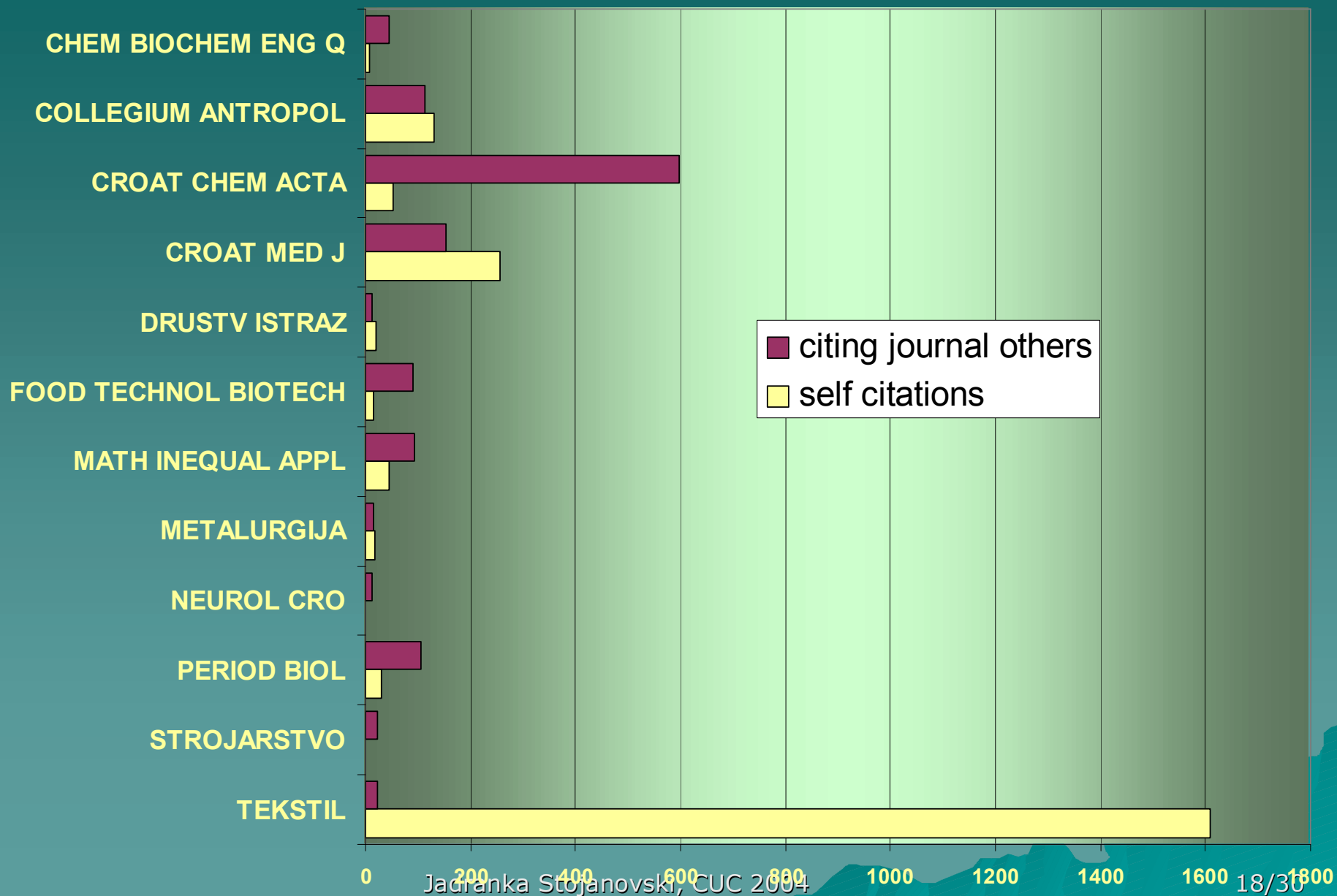


journal abbreviation	ISSN	number of articles in 2002	number of articles published in 2000 and 2001	total cites in 2002	number of cites in 2002 to articles published in 2000 and 2001	impact factor 2002
CHEM BIOCHEM ENG Q	0352-9568	26	45	53	7	0,156
COLLEGIUM ANTROPOL	0350-6134	81	180	243	55	0,306
CRO MED J	0353-9504	106	169	408	120	0,710
CROAT CHEM ACTA	0011-1643	68	144	649	104	0,722
DRUS ISTRAZ	1330-0288	34	87	34	8	0,092
FOOD TECHNOL BIOTECH	1330-9862	48	86	105	26	0,302
MATH INEQUAL APPL	1331-4343	77	109	138	66	0,606
METALURGIJA	0543-5846	45	88	33	9	0,102
NEUR CRO	0353-8842		14	14	2	0,143
PERIOD BIOL	0031-5362	47	203	135	19	0,094
STROJARSTVO	0562-1887		46	25	3	0,065
TEKSTIL	0492-5882	72	213	1633	158	0,742

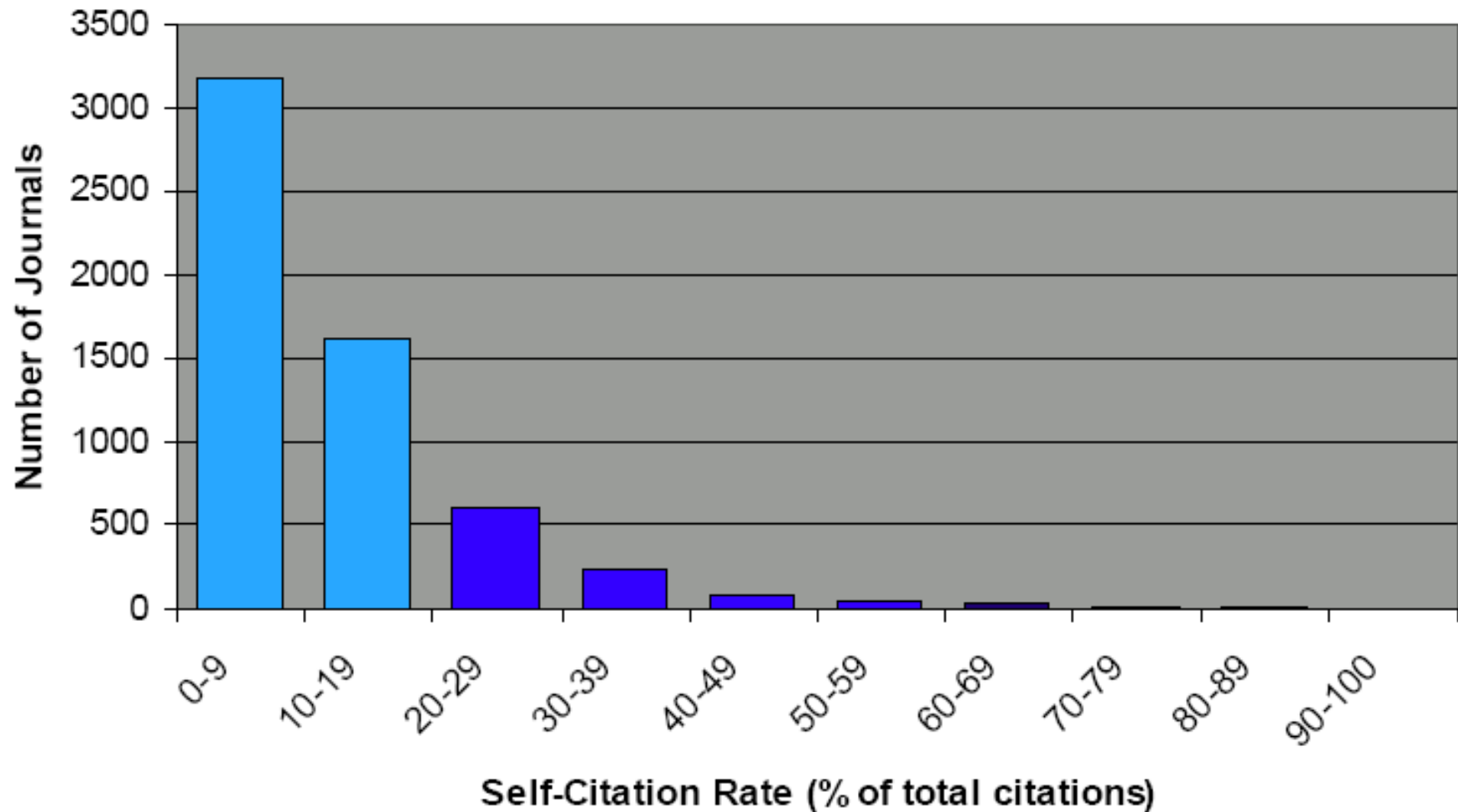
CITED JOURNALS (ALL YEARS)



CITING JOURNALS (ALL YEARS)



Distribution of Self-Citation Rate across JCR-Science Edition 2002

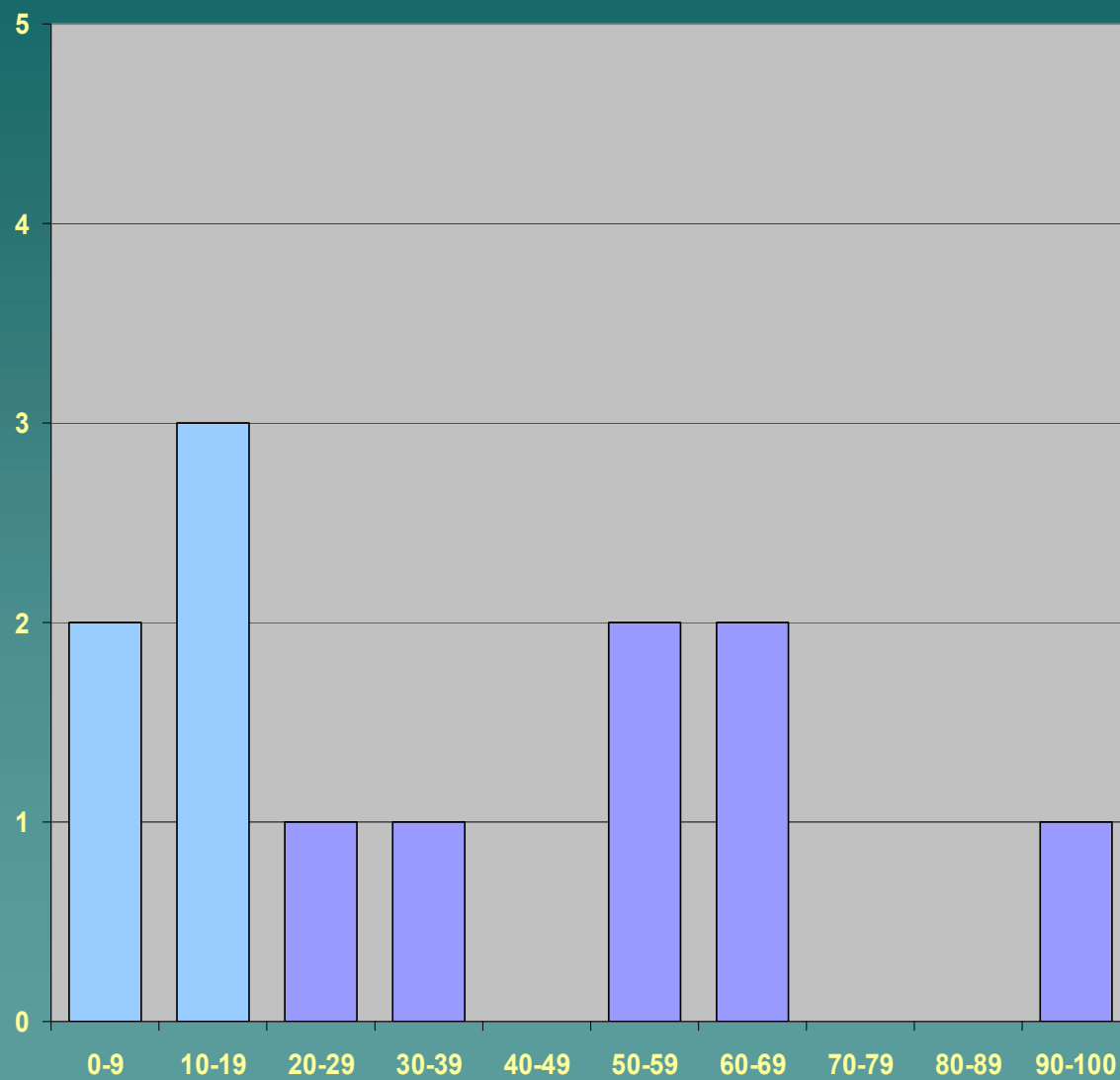


Journal self-citation in the JCR – Science Edition (2002): A Citation Study from The Thomson Corporation (5876 journals)

Jadranka Stojanovski, CUC 2004

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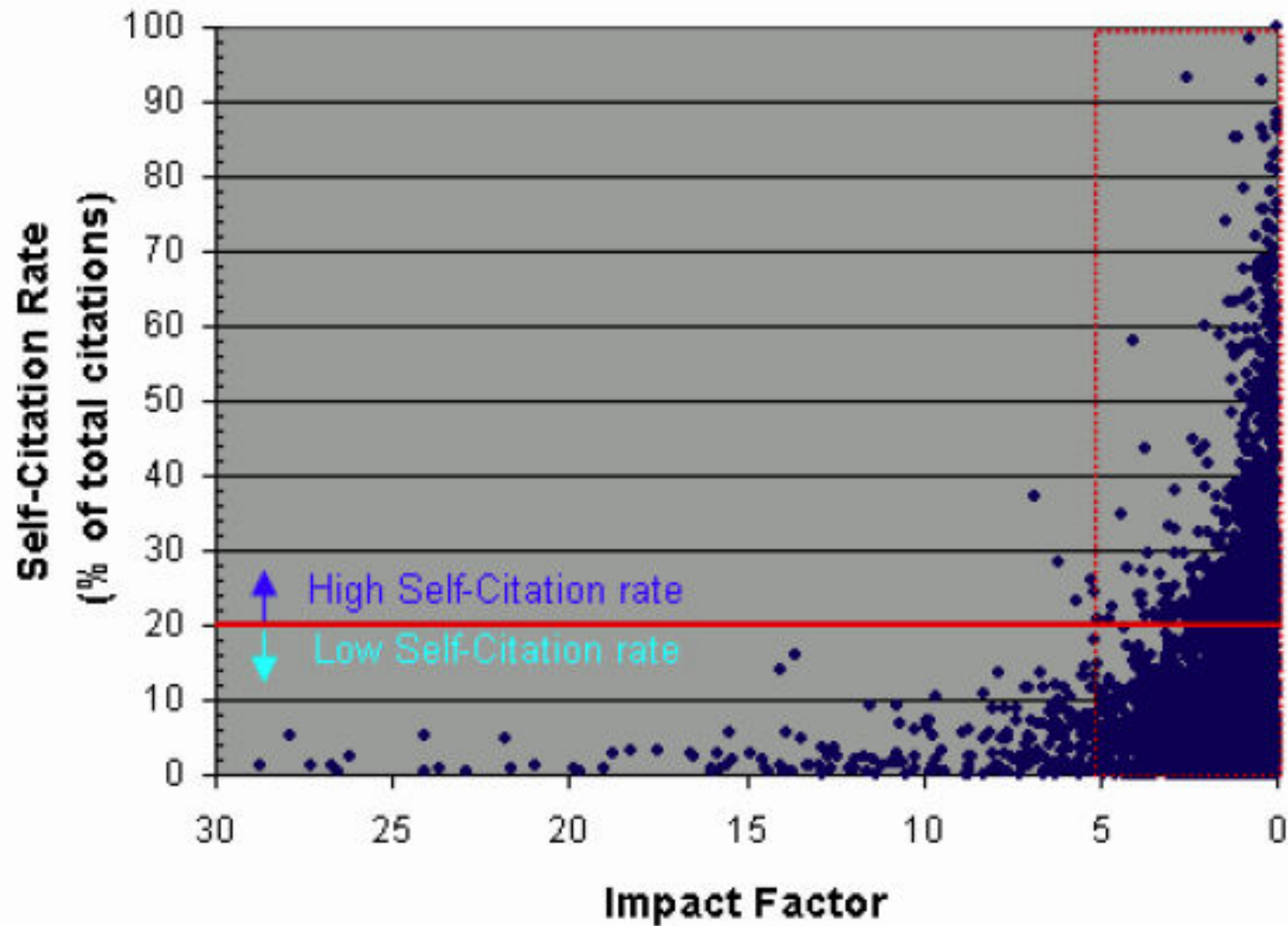
Distribution of self-citation rate accross Croatian journals included in ISI publications



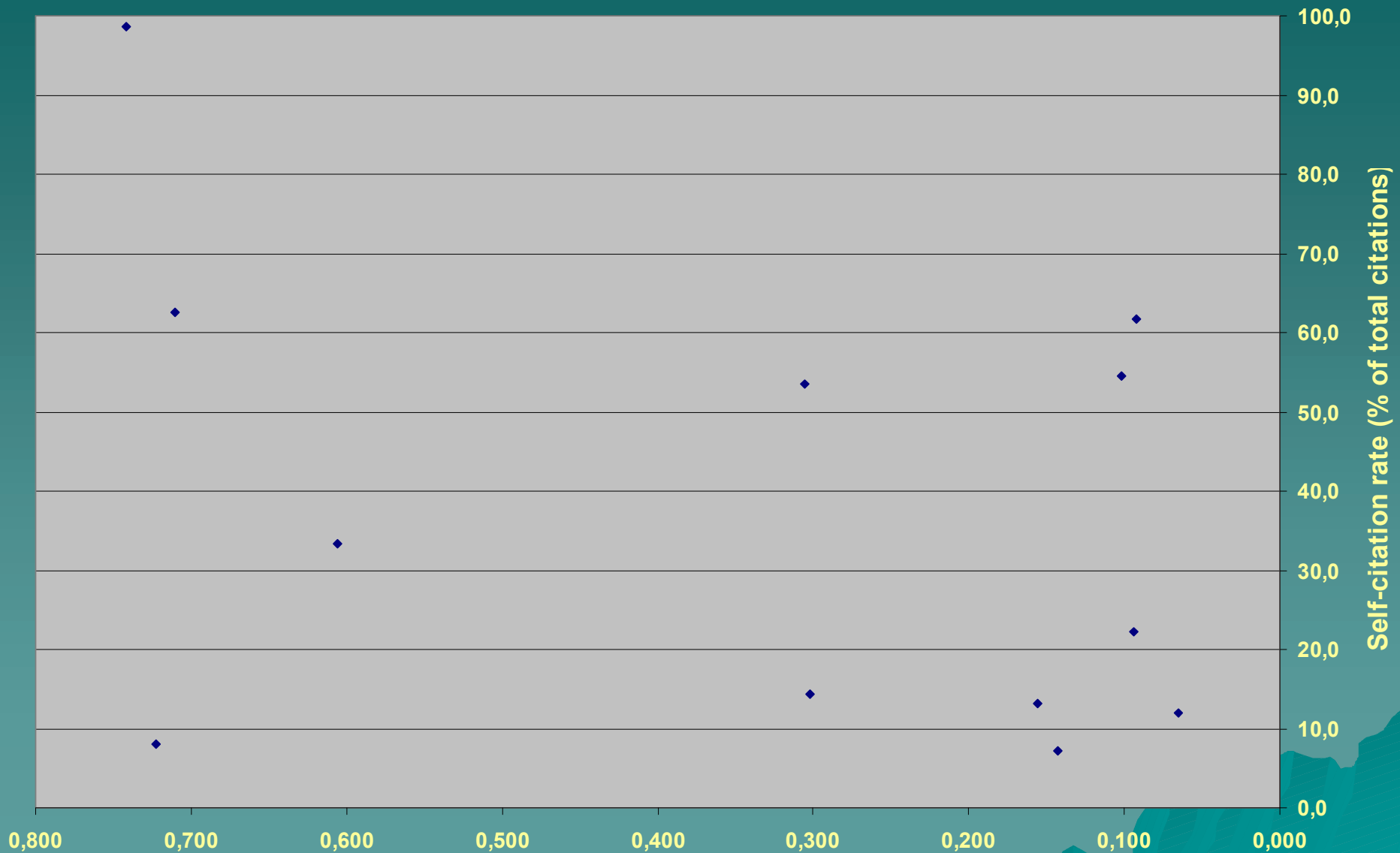
- ◆ the Cited journal lists shows that each journal is one of its own most frequently cited sources (!)
- ◆ a high volume of self-citation is not unusual in journals that are leaders in a field because of the consistently high quality of the papers they publish, and/or because of the uniqueness or novelty of their subject matter.
- ◆ there are journals where the observed rate of self-citation is a dominant influence in the total level of citation

2a.

Impact Factor versus Self-Citation Rate All Journals



Impact factor vs. self-citation rate



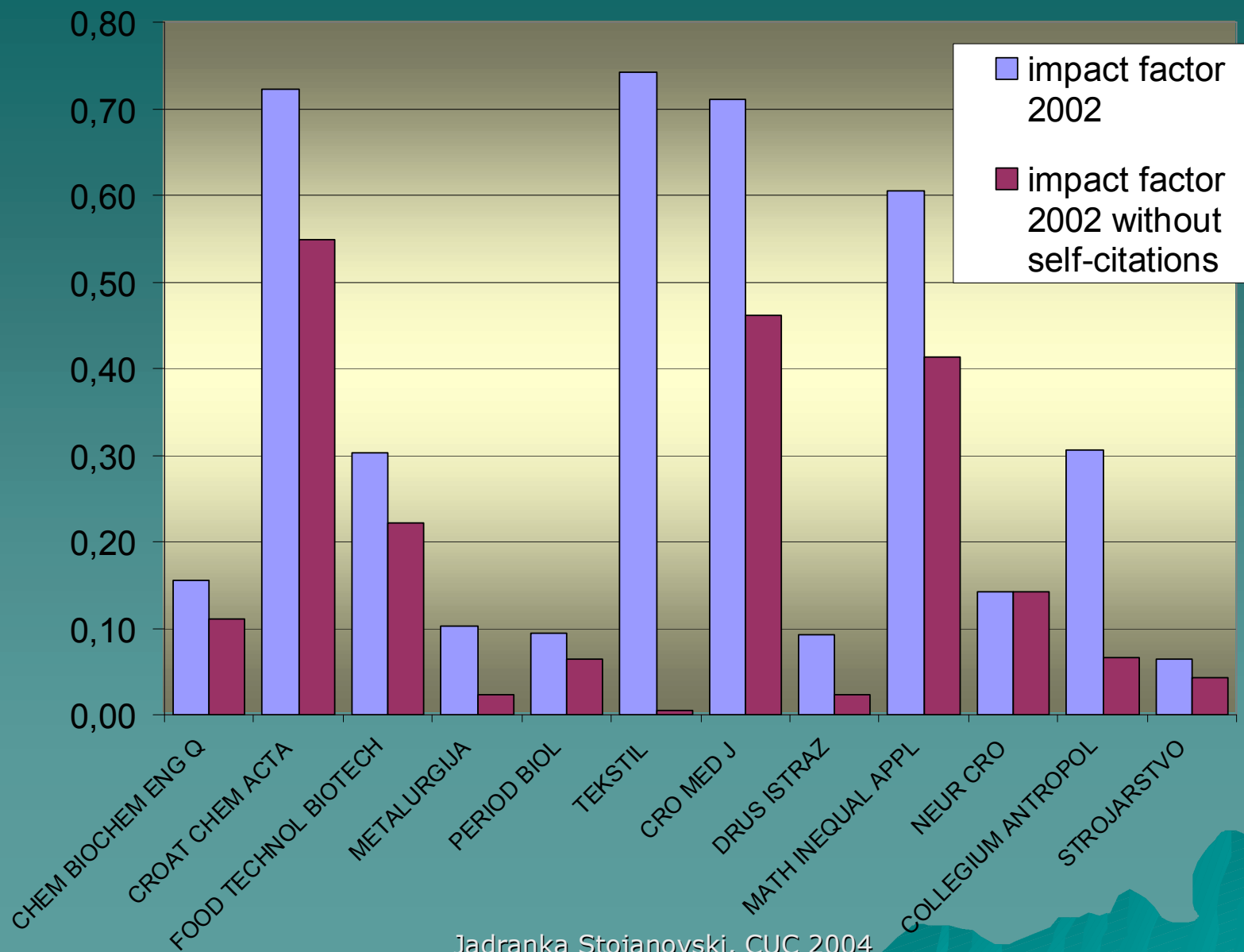
Cell biology category (top 10)

JCR Abbreviated Journal Title	2002 IF	Adjusted Impact Factor
NAT MED	28.740	28.388
CELL	27.254	26.678
NAT REV MOL CELL BIO	26.170	25.652
ANNU REV CELL DEV BI	22.870	22.630
TRENDS CELL BIOL	19.880	19.669
CURR OPIN CELL BIOL	19.022	18.715
NAT CELL BIOL	18.285	17.859
MOL CELL	16.471	16.036
CURR OPIN GENET DEV	12.111	11.956
J CELL BIOL	12.522	11.936

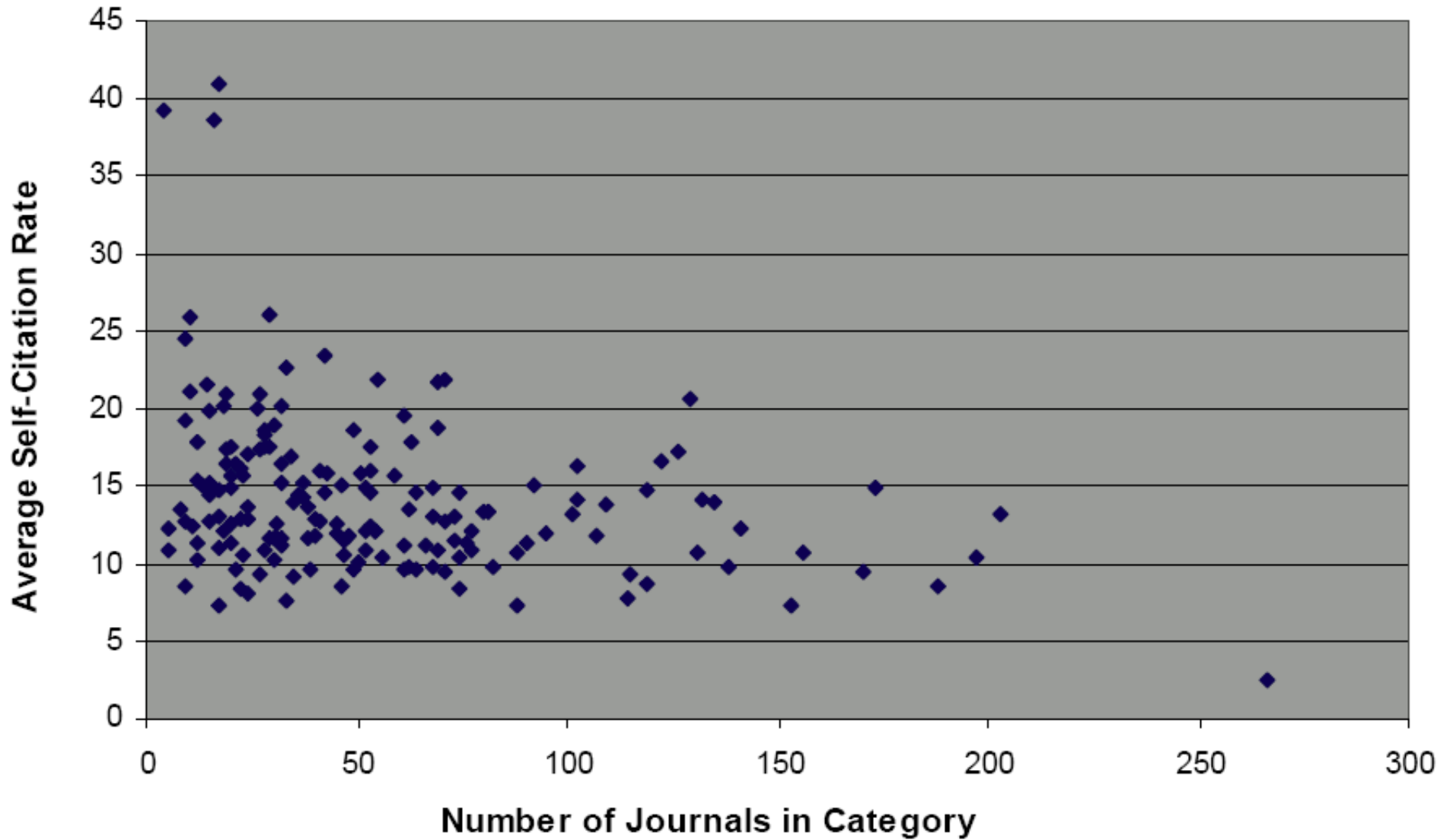
Croatian journals

JCR Abbreviated Journal Title	2002 IF	Adjusted Impact Factor
TEKSTIL	0,742	0,005
CROAT CHEM ACTA	0,722	0,604
CRO MED J	0,710	0,462
MATH INEQUAL APPL	0,606	0,413
COLLEGIUM ANTROPOL	0,306	0,067
FOOD TECHNOL BIOTECH	0,302	0,221
CHEM BIOCHEM ENG Q	0,156	0,089
NEUR CRO	0,143	0,071
METALURGIJA	0,102	0,023
PERIOD BIOL	0,094	0,064
DRUS ISTRAZ	0,092	0,023
STROJARSTVO	0,065	0,043

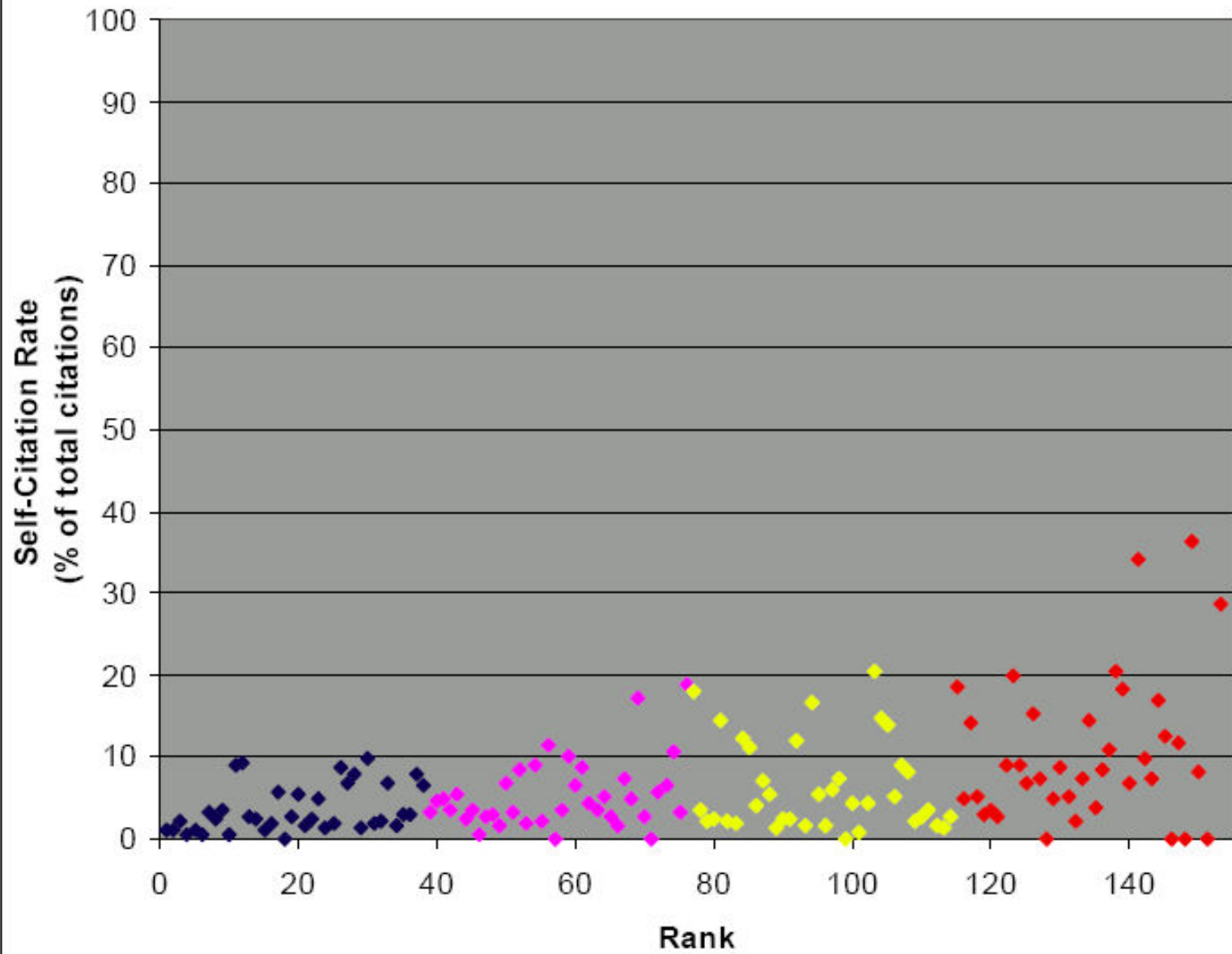
IF vs. IF without self-citations



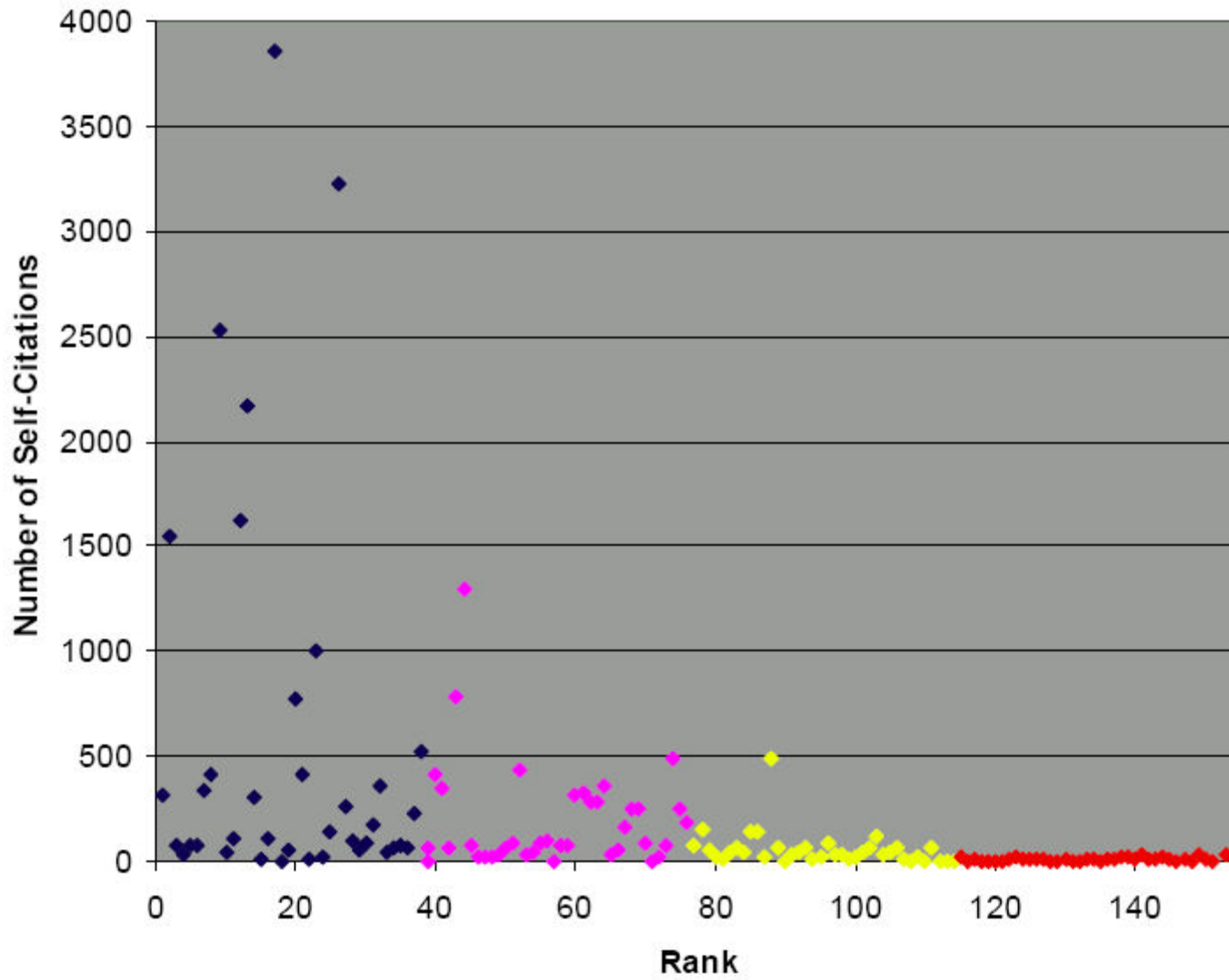
Category Size versus Average Self-Citation Rate



Cell Biology - 153 journals



Cell Biology - 153 journals



- ◆ journal self-citation is a known aspect of referencing practice -nearly every journal in the *JCR*-Science Edition in 2002 contains at least some reference to its own, previous literature
- ◆ examining the entire population of journals in the *JCR*, a criterion for an expected level of journal self-citation could be established - a **self-citation rate of 20% or less** is characteristic of the majority of the high-quality science journals selected for coverage in ISI databases.
- ◆ relatively high self-citation rate of Croatian ISI journals results from self-citations being considered in proportion to a smaller number of total citations
- ◆ self-citation is a characteristic of an individual journal's interaction with the citing literature, and should only be considered at the level of the individual journal