

Consortial Approaches to Scholarly Communication in Japan from 2000 on: Online Journals, Institutional Repostories and Resource Sharing

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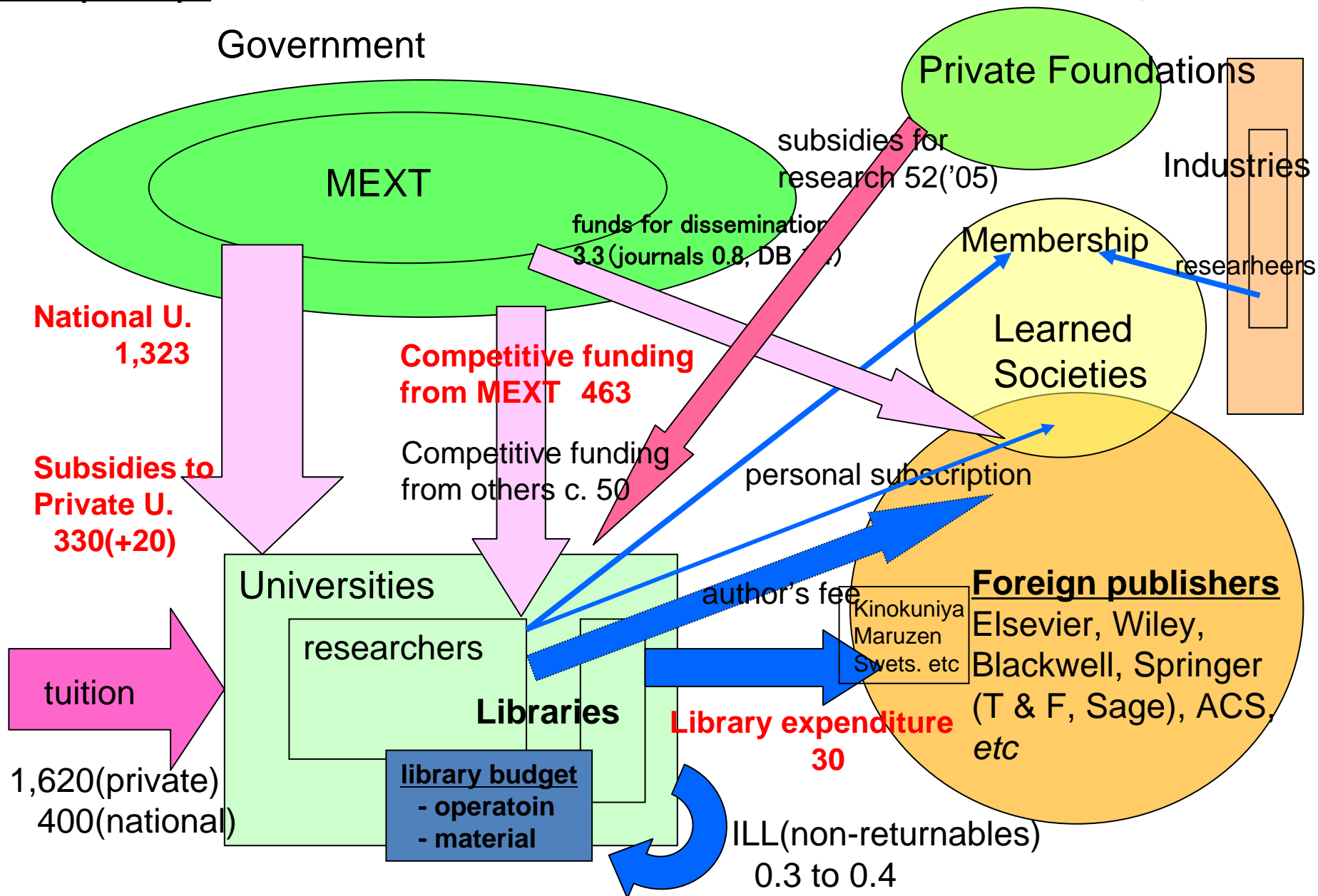
2007 ConCERT Annual Meeting,
Academia Sinica, November 15, 2007

Forget the paper! But not altogether,
please.

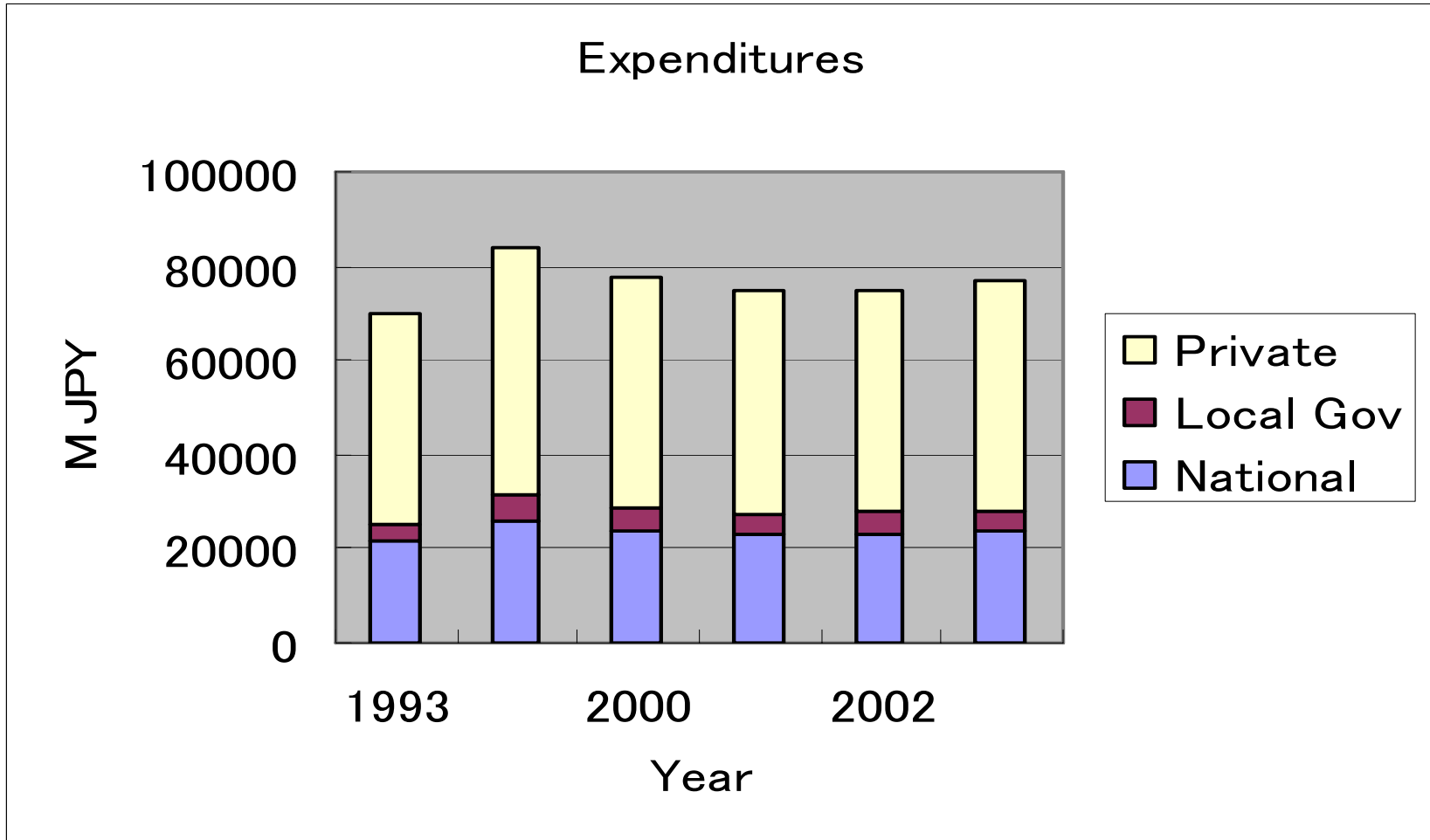
- The real outline is this:
 - Flow of money in Japan in the first decade of the 21st century
 - Problems with university libraries in the 1990s and now, and attempts to solve them
 - “Electronic journal consortia” in particular
 - Institutional repositories
 - A new way of looking at “electronic resources”
 - Gloomy futures

Money flow for higher education and research in Japan, 2005(BJPY)

(JPY0.12billion = US\$1M)



Library statistics



In short,

- Nationwide, out of 16.5T JPY(not accurately “out of”) spends on R&D in Japan, between 3T and 5T goes to higher education sector, which uses about 1% for communication purposes
- Half of university’s expenditure on library resources is on “foreign journals”
- Government funding is prevalent
- Human resources are not accurately calculated

Other backgrounds

- Research intensity of the country
 - 10% of ISI papers are from Japan(vaguely)
- University geography and demography
 - national/private = research/education
 - 400 or 200 thousand potential academic users
- Historical constraints or fatalism
 - Scholarship is “learning from West,” ie “importing,” perhaps by way of agents
 - North America-centered research unilateralism
- Publishing business and market in Japan
 - niche native language market where you don’t have to, or rather must not, grow

Higher education geography and demography

(2004)

	# of U	# of Undergrad	# of Grad	# of Faculty
National	87	459,496	146,913	60,897
Local Gov	80	105,176	13,575	11,188
Private	542	1,941,251	83,536	86,685
Total	709	2,505,923	244,024	158,770

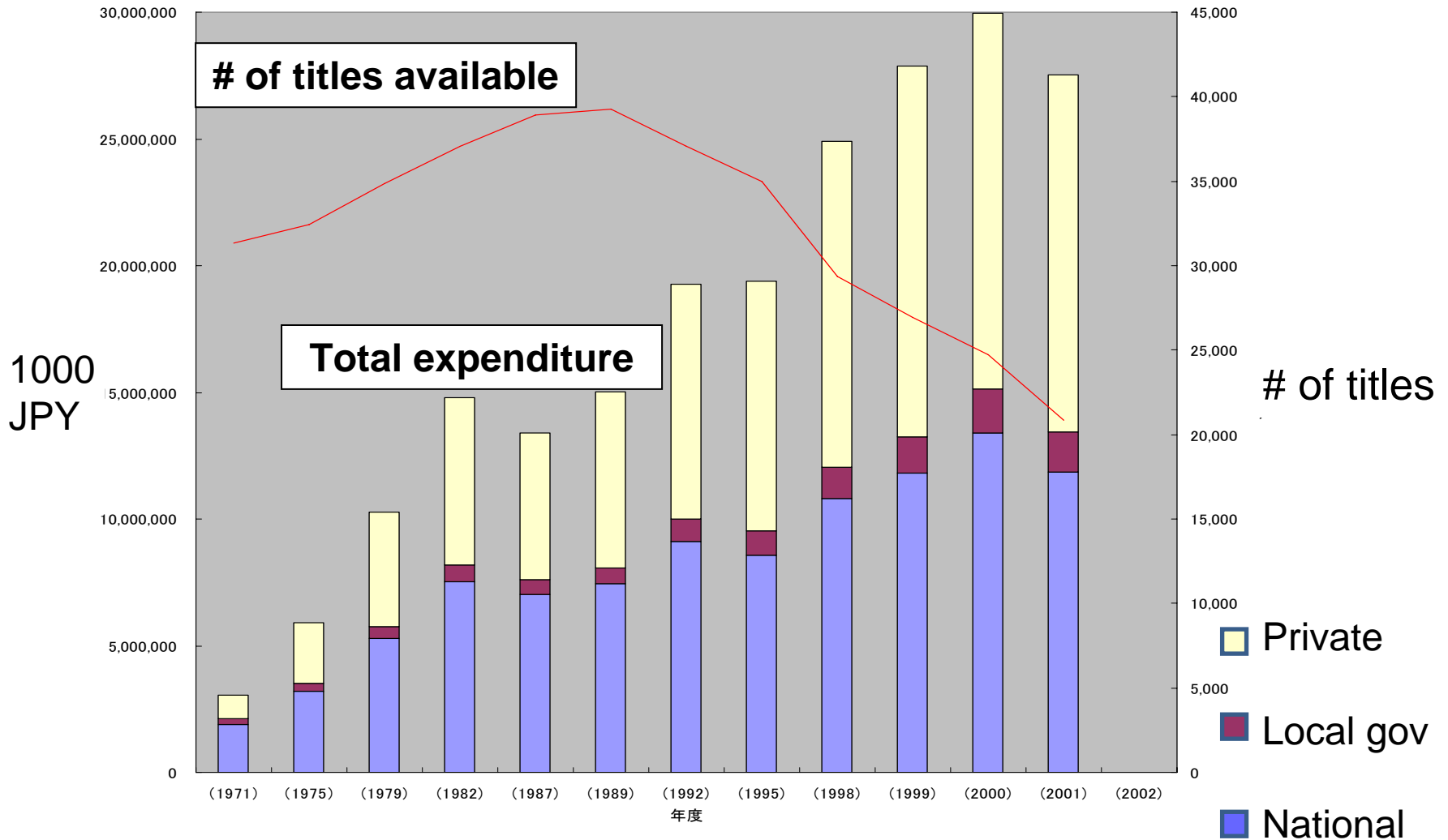
Prehistory, part of which is not in the paper

- Decision making on campus
 - Libraries do not have or control budgets
 - Faculty selects as they like. As a result, lots of duplicates, no principled collection and finally licentious cancellations
- Consortial approaches by library
 - Began in 1927(!) among medical libraries
 - First union catalog in 1952, nationwide document delivery from 1957(not consortial), “foreign journal centers” from 1970s, online union catalog from 1986, ILL message sending from 1994

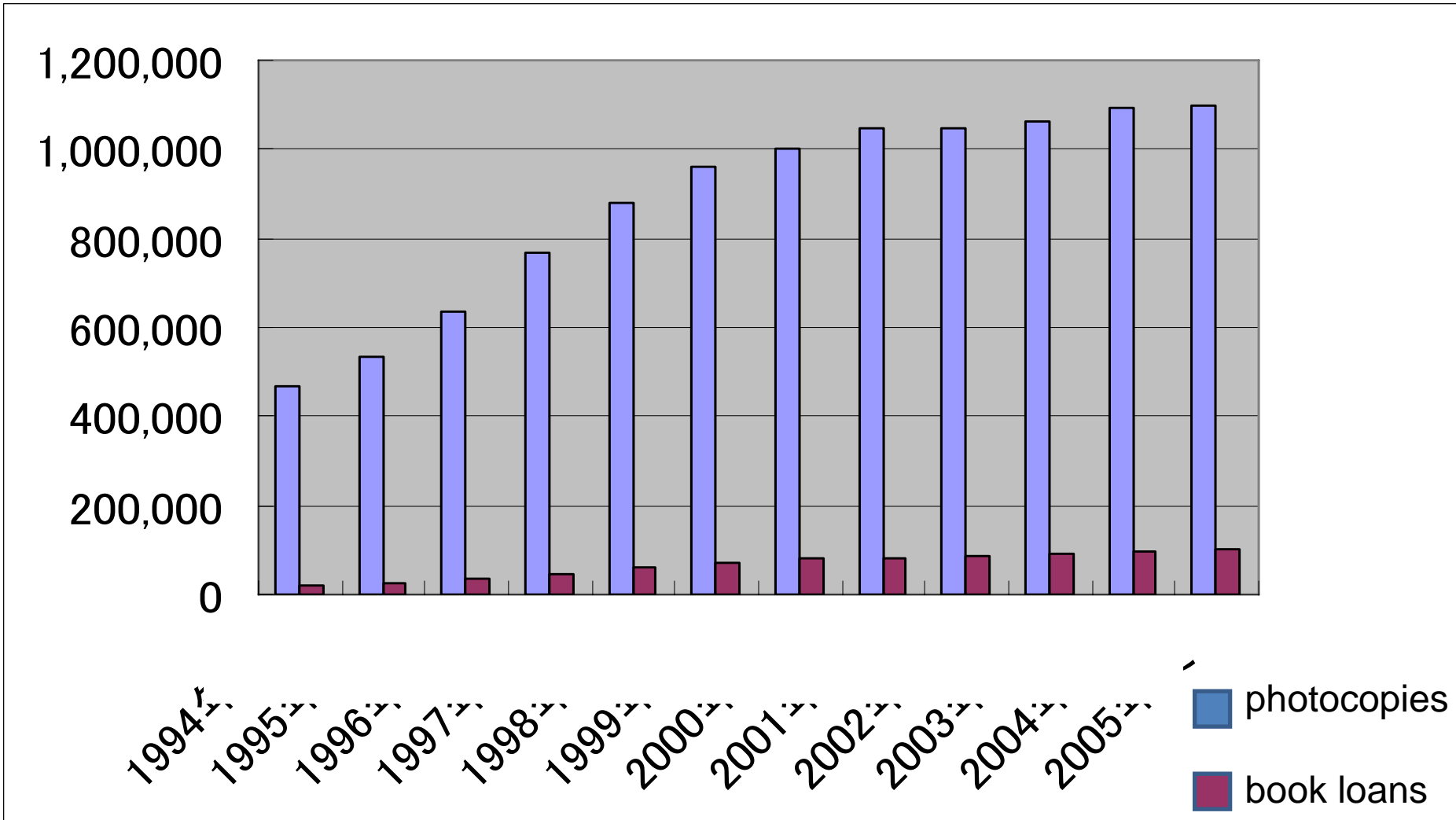
Japanese version of “serials crisis” in 90s

- From 40000 titles to 20000 titles in 10 years
- Increase of ILL request for journal articles observed
- “Foreign journal centers” functioned well
- On the other hand, there were “digital/electronic library” projects, heavily funded for special collection digitization, journal article digitization etc to nobody’s benefit

Decreasing number of titles subscribed



Increase in ILL, but mostly DD-like



Elsevier's attacks(?)

- SD21 from 1999
 - Promotional projects for Japanese universities for 3 years from 1999
 - No additional charge for electronic access on condition virtually of no cancellation, or of sustenance of past spend
 - Opened up all titles in 2000
- Yen pricing from 2000
 - No benefit from strong yen, which actually was weak the next year
 - Resentment etc.

Positive attitudes for E-journals

- Start to talk with Elsevier, Oct 2000
 - Some 100 National University Libraries, represented by JANUL's Task force
 - Move to new models (Freedom, Subject, Complete, Limited)
 - Skipping agents
- Start to talk with other publishers, Jan 2001
- Two internal problems:
 - University budget structure: no central funding
 - MEXT funding necessary
 - Unreliability of the digital: “stable” access
 - Need for “archiving, ” for which NII is responsible

Basic principles in negotiations

- Direct talk and payment with publishers; no (even good) agents admitted,
 - well, actually it is just “in principle”
 - and a way of evading sales(consumption) tax
- Pursuit for as big a deal as possible with any publisher
 - Affordable “big deals” are sustainable open access, right?
- No multi-site contract, permission for ILL use and walk-in users, provision of “usage” stats etc

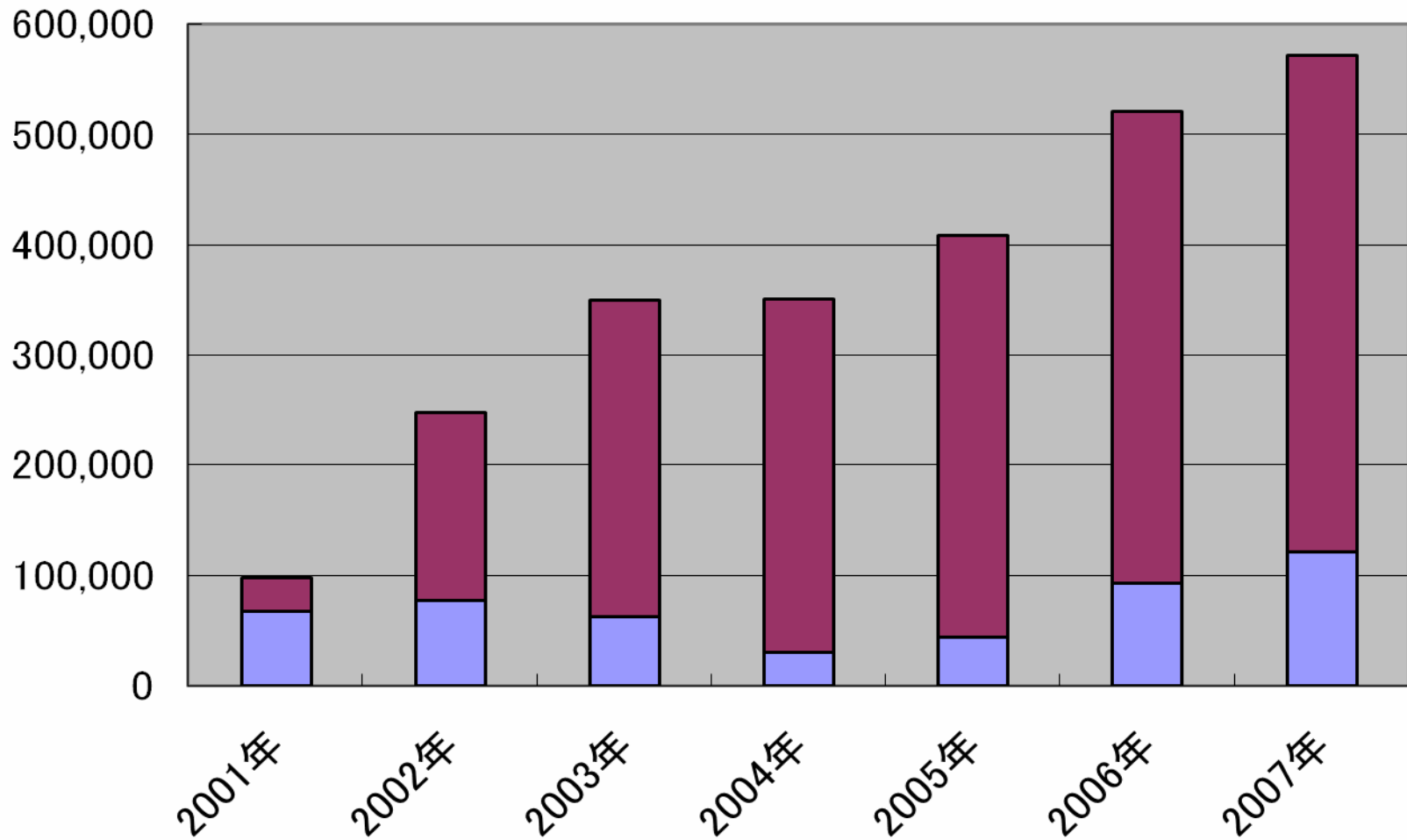
JANUL currently

- Talks, on regular basis, with over 30 major and not necessarily major publishers/vendors, commercial and society as well as international and domestic;
- Pays attention to about 30 journal collections and about 20 databases; and
- Has no indigenous funds, receives no additional subsidies and signs no contract,
- Installing just a team of librarians which represents its member libraries in negotiations with publishers and vendors, which can choose whether to participate or not, while it tries to optimize the information environment in Japanese universities, where most research in Japan is being done, and
- Working together with ICOLC members in strategic perspective

Achievements, if I may say so, so far

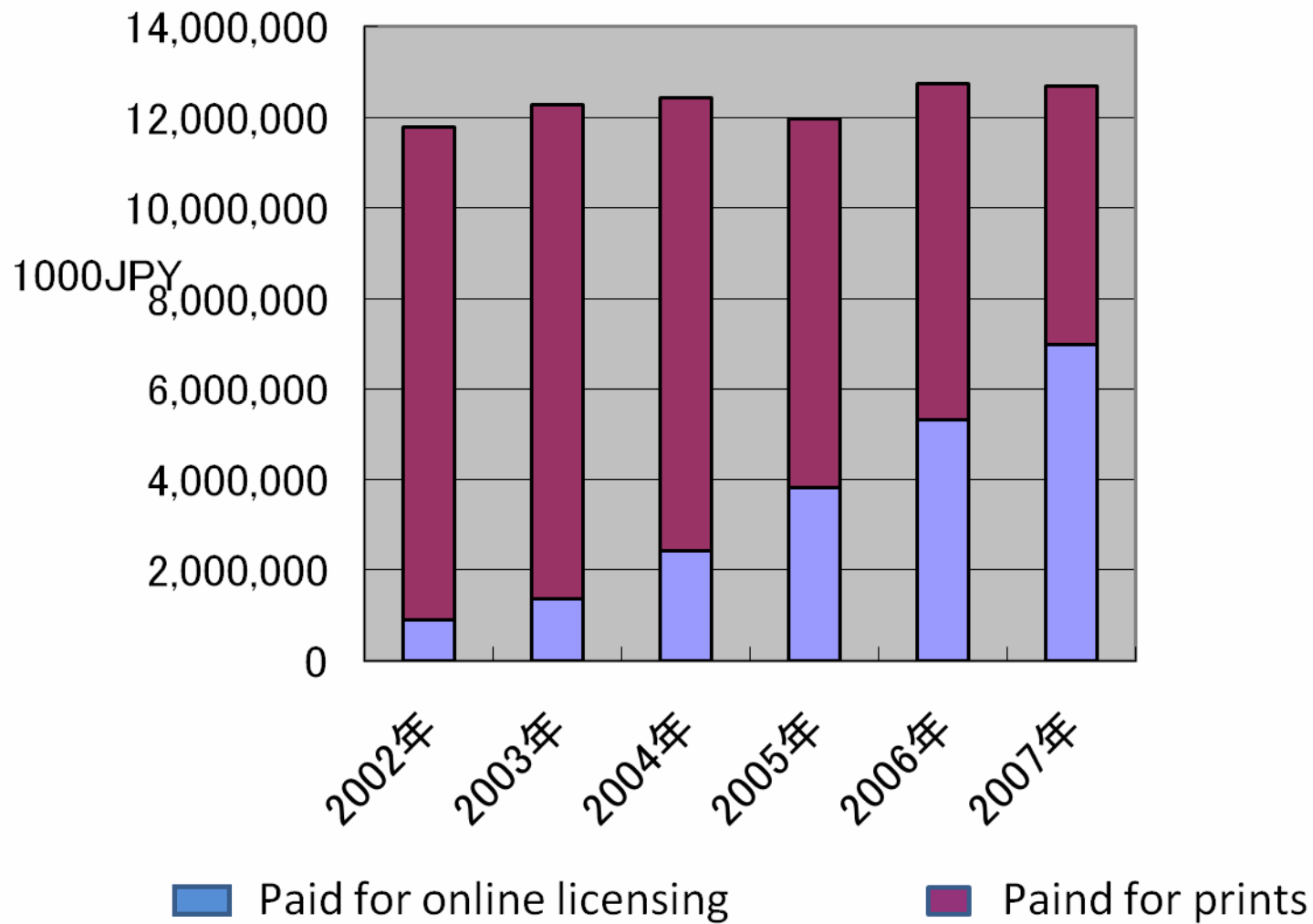
- Improved and more homogenized information environment on national university campus
 - from 1000 to 6000
 - researchers should be able to move around
- Not increased total expenditure
 - Between 120 JPY and 130 JPY
 - of course, there are winners and losers, though
- Increased “usage”
 - Maybe good cost per download(50 JPY guys, 100 JPY guys, 300 JPY guys, more than 500 guys)

Number of total titles accessible by national university campuses
(with dupliates)



Average **6,653**

Expenditure on foreign journals by national universities

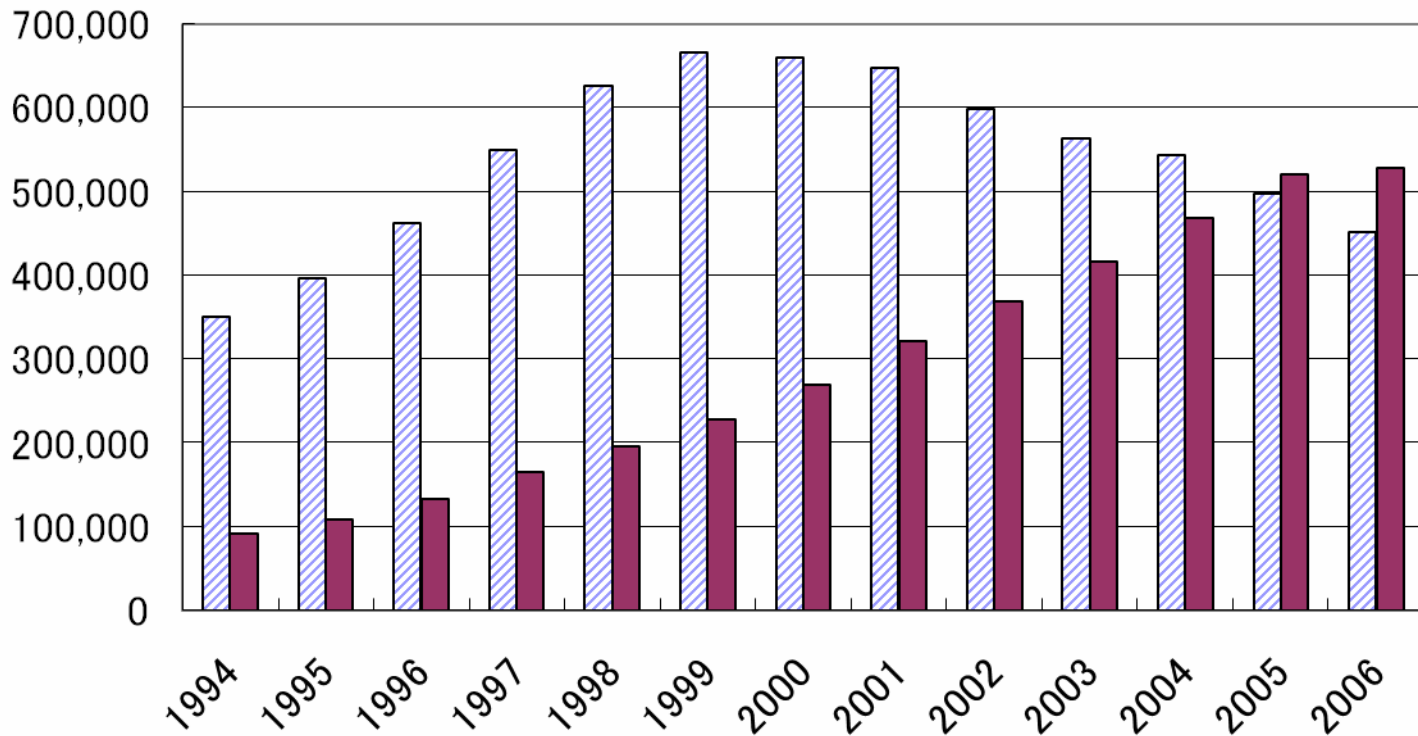


Impact of consortial deals attested by ILL stats

- NACSIS-ILL (message sending system) :
generally spoken,
 - started in 1994,
 - now supports message sending among more than 1000 libraries, and
 - handles more than 1,000,000 transactions annually,
 - which is about 80% of requests university libraries fill, with other requests from hospitals and national laboratories.

Request for foreign journal articles has been decreasing since 2000

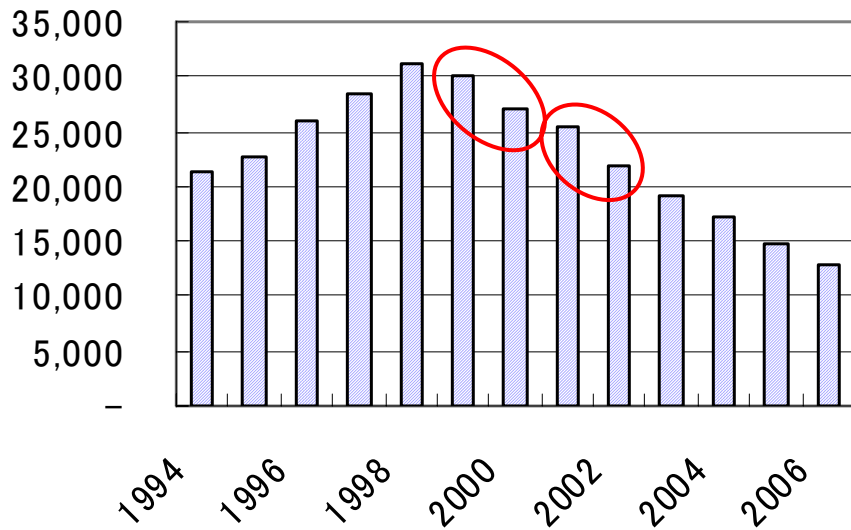
- requests for foreign journal articles
- requests for domestic journal articles



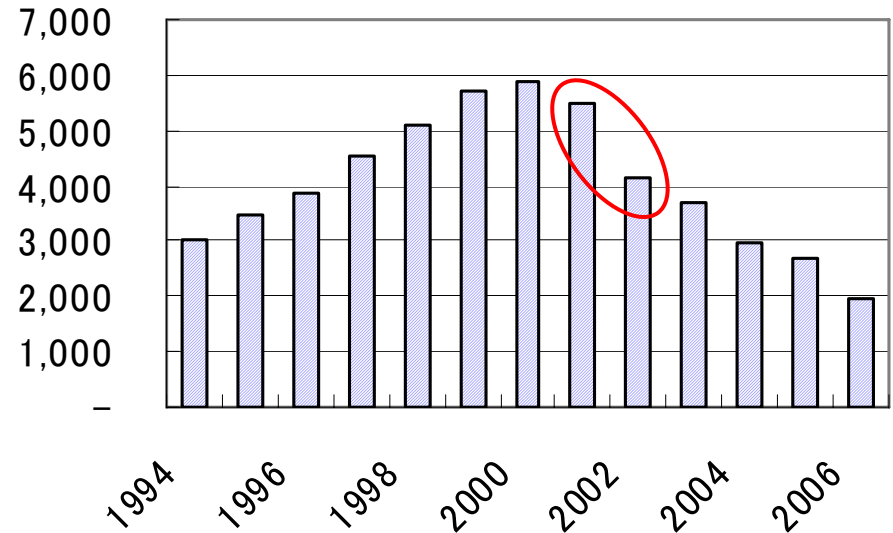
Steep drops in the number of requests for journals classified by platforms observable

ScienceDirect、Wiley InterScience

ScienceDirect

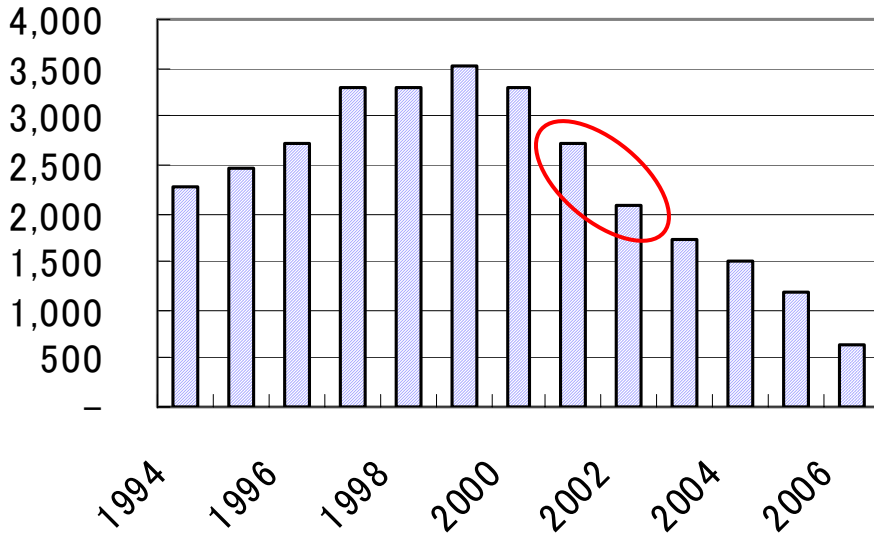


Wiley InterScience

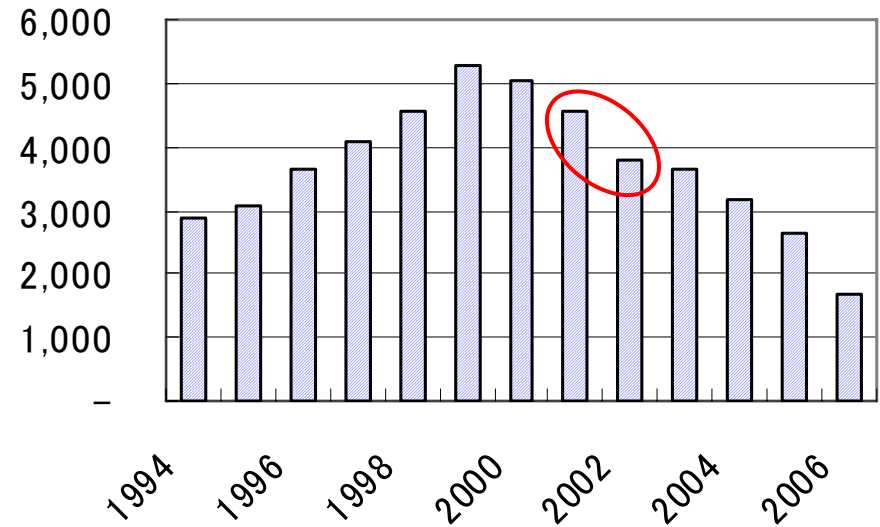


SpringerLink, Blackwell Synergy

SpringerLink

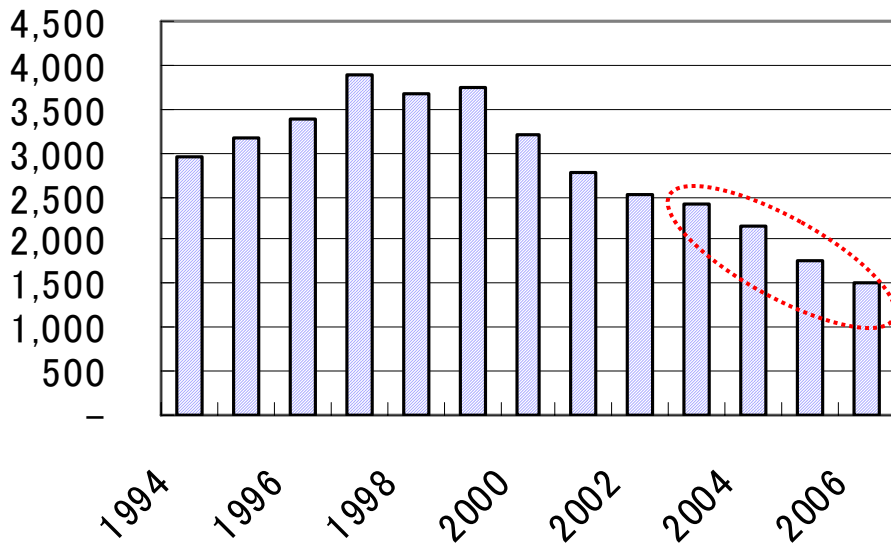


Blackwell Synergy

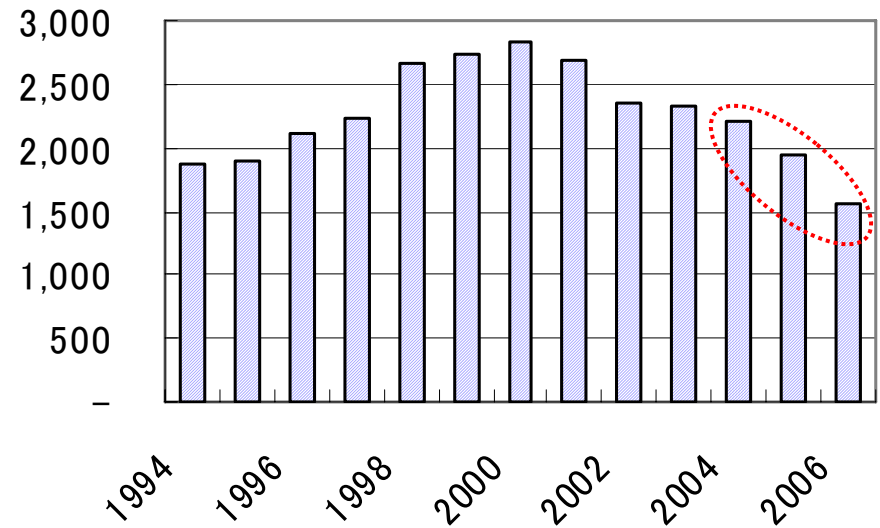


Nature, ACS

Nature



ACS



ScienceDirect

■ Year the most lacking
■ Year the least requested

Elsevier

番号	BIBID	タイトル	1994年度	1995年度	1996年度	1997年度	1998年度	1999年度	2000年度	2001年度	2002年度	2003年度	2004年度	2005年度	2006年度
3	AA10678346	Genomics	1.00	1.01	1.20	1.36	1.32	1.17	1.04	0.81	0.62	0.41	0.32	0.22	0.20
4	AA00695371	Journal of chromatography	1.00	0.87	0.84	0.83	0.86	0.82	0.71	0.66	0.57	0.58	0.48	0.43	0.33
5	AA00642943	FEBS letters	1.00	0.99	1.15	1.18	1.33	1.23	1.16	1.00	0.55	0.35	0.23	0.20	0.13
6	AA00654385	Gene	1.00	1.16	1.37	1.46	1.63	1.47	1.28	1.18	0.84	0.64	0.56	0.55	0.41
7	AA0057324X	Brain research	1.00	0.94	1.11	1.21	1.31	1.27	0.94	0.89	0.92	0.95	0.88	0.74	0.73
8	AA00564635	Biochimica et biophysica acta	1.00	1.35	1.55	1.64	2.04	1.98	1.95	1.73	1.50	1.32	1.00	0.95	0.75
9	AA00524867	Analytical biochemistry	1.00	1.03	1.01	1.13	1.25	1.29	1.32	1.25	1.18	0.95	0.90	0.80	0.66
12	AA00602122	Chemical physics letters	1.00	0.94	1.11	1.26	1.49	1.25	1.22	1.16	1.10	1.00	1.14	0.97	0.81
15	AA00564395	Biochemical and biophysical research communications	1.00	0.98	0.96	1.07	1.23	1.23	1.51	1.34	1.13	0.87	0.74	0.68	0.58
16	AA00863068	Thin solid films	1.00	0.78	1.17	1.40	1.49	1.41	1.05	1.03	1.02	0.86	1.02	0.72	0.57
23	AA00853803	Surface science	1.00	1.01	1.17	1.04	1.19	1.23	0.91	0.90	0.84	0.75	0.65	0.51	0.51
24	AA00702794	Journal of molecular biology	1.00	1.02	1.15	1.17	1.34	1.66	1.65	1.54	1.31	1.09	0.84	0.70	0.70
26	AA10736690	Neuron	1.00	1.08	1.30	1.17	1.20	1.24	1.12	1.24	1.28	1.14	0.82	0.38	0.34
27	AA00861801	Tetrahedron letters	1.00	1.23	1.68	1.68	1.74	1.52	1.69	1.70	1.31	1.28	1.20	1.09	0.99
29	AA00754925	Neuroscience letters	1.00	1.05	1.25	1.42	1.36	1.34	1.11	1.13	1.15	1.08	1.00	0.83	0.73
31	AA00861787	Tetrahedron	1.00	1.13	1.52	1.52	1.56	1.41	1.37	1.42	1.48	1.40	1.30	1.17	1.17
35	AA00524834	Analytica chimica acta	1.00	0.95	1.16	1.27	1.57	1.36	1.08	1.03	0.79	0.74	0.81	0.59	0.50
38	AA00193861	FEMS microbiology letters	1.00	1.16	1.37	1.51	2.14	1.76	1.61	1.48	1.23	1.01	0.93	0.75	0.71
39	AA00704122	Journal of organometallic chemistry	1.00	1.19	1.46	1.45	1.58	1.55	1.42	1.54	1.50	1.23	1.17	1.02	0.88
40	AA00446016	Synthetic metals	1.00	1.09	1.51	1.41	1.48	1.45	1.09	1.00	0.97	0.88	0.90	0.84	0.59
46	AA10620324	Hepatology	1.00	0.92	1.05	1.11	1.05	0.96	0.91	0.92	0.93	0.68	0.52	0.46	0.28
47	AA0075489X	Neuroscience	1.00	1.09	1.14	1.52	1.71	1.62	1.18	1.03	1.06	0.98	0.96	0.82	0.71
50	AA00598932	Carbohydrate research	1.00	0.96	1.17	1.33	1.39	1.43	1.32	1.36	1.17	1.10	1.11	0.89	0.92
51	AA00702477	Journal of membrane science	1.00	0.78	0.92	0.95	0.77	1.14	0.77	0.66	0.43	0.48	0.55	0.53	0.30
55	AA00745811	Molecular and cellular endocrinology	1.00	0.98	0.94	1.24	1.23	1.43	1.17	1.12	0.71	0.71	0.52	0.42	0.35
58	AA00776983	Polymer : the chemistry, physics and technology of high polymers	1.00	0.92	1.26	1.47	1.53	1.51	1.14	1.44	1.01	1.19	1.00	1.16	0.70
59	AA10459105	Journal of hepatology	1.00	1.24	1.31	1.56	1.71	1.45	1.23	0.88	0.69	0.60	0.47	0.40	0.36
61	AA10673524	Physica. C. Superconductivity	1.00	1.28	1.26	1.04	1.54	1.21	0.79	0.89	0.84	0.44	0.28	0.28	0.20
63	AA00696986	Journal of electroanalytical chemistry and interfacial electrochemistry	1.00	0.88	0.93	0.93	0.70	0.75	0.75	0.75	0.66	0.49	0.45	0.42	0.34
65	AA00696341	Journal of crystal growth	1.00	1.04	1.28	1.52	1.34	1.49	1.45	1.70	1.24	1.07	0.99	0.96	0.81
66	AA00772020	Pharmacology, biochemistry and behavior	1.00	1.08	1.09	1.36	1.52	1.34	1.17	0.92	0.86	0.83	0.83	0.70	0.61
67	AA00707561	Journal of solid state chemistry	1.00	1.13	1.18	1.11	1.42	1.24	1.37	1.40	1.19	1.11	1.12	1.11	0.85
68	AA00547159	Archives of biochemistry and biophysics	1.00	1.21	1.24	1.53	1.82	1.60	2.03	1.87	1.44	1.05	1.03	0.90	0.73
71	AA00699645	Journal of immunological methods	1.00	1.24	1.16	1.35	1.49	1.37	1.28	1.17	0.96	1.08	0.78	0.61	0.65
72	AA00639687	European journal of pharmacology	1.00	1.16	1.12	1.20	1.37	1.36	1.35	1.18	0.85	0.67	0.71	0.63	0.67
77	AA00749583	Mutation research	1.00	1.16	1.46	1.84	2.08	2.33	1.93	1.84	1.38	1.33	1.06	0.89	0.76
85	AA00352932	Physiology and behavior	1.00	1.36	1.46	1.59	1.97	1.69	1.74	1.42	1.30	1.37	1.21	1.21	1.24
88	AA10753496	Current opinion in cell biology	1.00	1.20	1.28	1.69	1.97	1.96	1.49	1.12	1.00	0.91	0.70	0.40	0.30
95	AA00564486	Biochemical pharmacology	1.00	0.88	1.16	1.39	1.66	1.61	1.44	1.43	1.05	0.75	0.74	0.58	0.58
97	AA00774558	Phytochemistry	1.00	1.24	1.45	1.75	1.81	1.76	1.88	1.75	1.52	1.38	1.56	1.21	1.03
98	AA00703560	Journal of non-crystalline solids	1.00	1.27	1.58	1.87	2.09	2.13	1.46	1.27	1.28	1.11	0.97	0.88	0.73

Wiley

番号	BIBID	タイトル	1994年度	1995年度	1996年度	1997年度	1998年度	1999年度	2000年度	2001年度	2002年度	2003年度	2004年度	2005年度	2006年度
21	AA00520742	American journal of medical genetics	1.00	1.16	1.37	1.49	1.55	1.66	1.93	1.59	1.20	0.87	0.66	0.53	0.35
36	AA00695917	The journal of comparative neurology	1.00	1.17	1.15	1.46	1.71	2.07	1.91	1.90	1.63	1.68	1.40	1.34	0.96
60	AA00693605	Journal of applied polymer science	1.00	1.22	1.30	1.74	2.15	1.99	2.16	2.63	1.66	1.77	1.44	1.42	1.08
62	AA00703378	Journal of neuroscience research	1.00	1.14	1.55	1.74	2.05	2.34	2.24	2.06	1.75	1.51	1.03	0.85	0.53
70	AA1052210X	Journal of cellular biochemistry	1.00	1.19	1.21	1.60	1.86	2.21	2.20	1.93	1.27	1.23	0.86	0.76	0.57
73	AA00566288	Biotechnology and bioengineering	1.00	0.82	0.95	0.86	0.83	1.22	1.39	1.23	0.99	0.70	0.67	0.66	0.60
75	AA00694856	Journal of cellular physiology	1.00	1.28	1.21	1.55	1.54	1.64	1.54	1.16	0.87	0.71	0.67	0.55	0.43

Springer

番号	BIBID	タイトル	1994年度	1995年度	1996年度	1997年度	1998年度	1999年度	2000年度	2001年度	2002年度	2003年度	2004年度	2005年度	2006年度
37	AA00745844	Molecular and general genetics : MGG	1.00	1.07	1.02	1.34	1.24	1.40	1.32	1.01	0.56	0.56	0.42	0.34	0.26
64	AA0066617X	Human genetics	1.00	1.23	1.17	1.22	1.17	1.22	0.91	0.81	0.48	0.34	0.27	0.27	0.19
69	AA10624890	Plant molecular biology	1.00	1.36	1.83	2.16	2.03	1.93	1.86	1.64	1.46	0.99	0.71	0.49	0.20
82	AA00548209	Archives of microbiology	1.00	1.15	1.06	1.26	1.26	1.21	1.57	1.13	0.83	0.64	0.65	0.49	0.31
83	AA00745800	Molecular and cellular biochemistry	1.00	0.84	0.99	1.33	1.61	1.91	1.74	1.51	1.32	1.25	1.12	0.77	0.34
94	AA00701725	Journal of materials science	1.00	0.76	1.20	1.40	1.49	1.73	1.41	1.21	1.04	0.97	1.02	0.91	0.41

Blackwell

番号	BIBID	タイトル	1994年度	1995年度	1996年度	1997年度	1998年度	1999年度	2000年度	2001年度	2002年度	2003年度	2004年度	2005年度	2006年度
11	AA00051776	Annals of the New York Academy of Sciences	1.00	1.00	1.14	1.35	1.61	2.02	2.00	1.86	1.82	1.90	1.92	1.59	1.06
22	AA00639541	European journal of biochemistry	1.00	1.10	1.38	1.51	1.62	1.46	1.34	1.07	0.83	0.79	0.54	0.27	0.17
33	AA10692325	Molecular microbiology	1.00	0.91	1.14	1.27	1.45	1.86	1.97	1.77	1.24	0.90	0.65	0.41	0.32
57	AA00253169	The Journal of physiology	1.00	0.98	1.24	1.07	1.28	1.53	1.29	1.24	1.09	1.19	1.13	1.16	0.39
92	AA00664436	Histopathology	1.00	1.16	1.17	1.30	1.37	1.69	1.42	1.13	0.88	0.89	0.75	0.65	0.67
96	AA10672270	The European journal of neuroscience	1.00	1.48	1.67	2.16	2.34	2.66	2.53	2.60	1.96	1.93	1.48	1.54	0.91

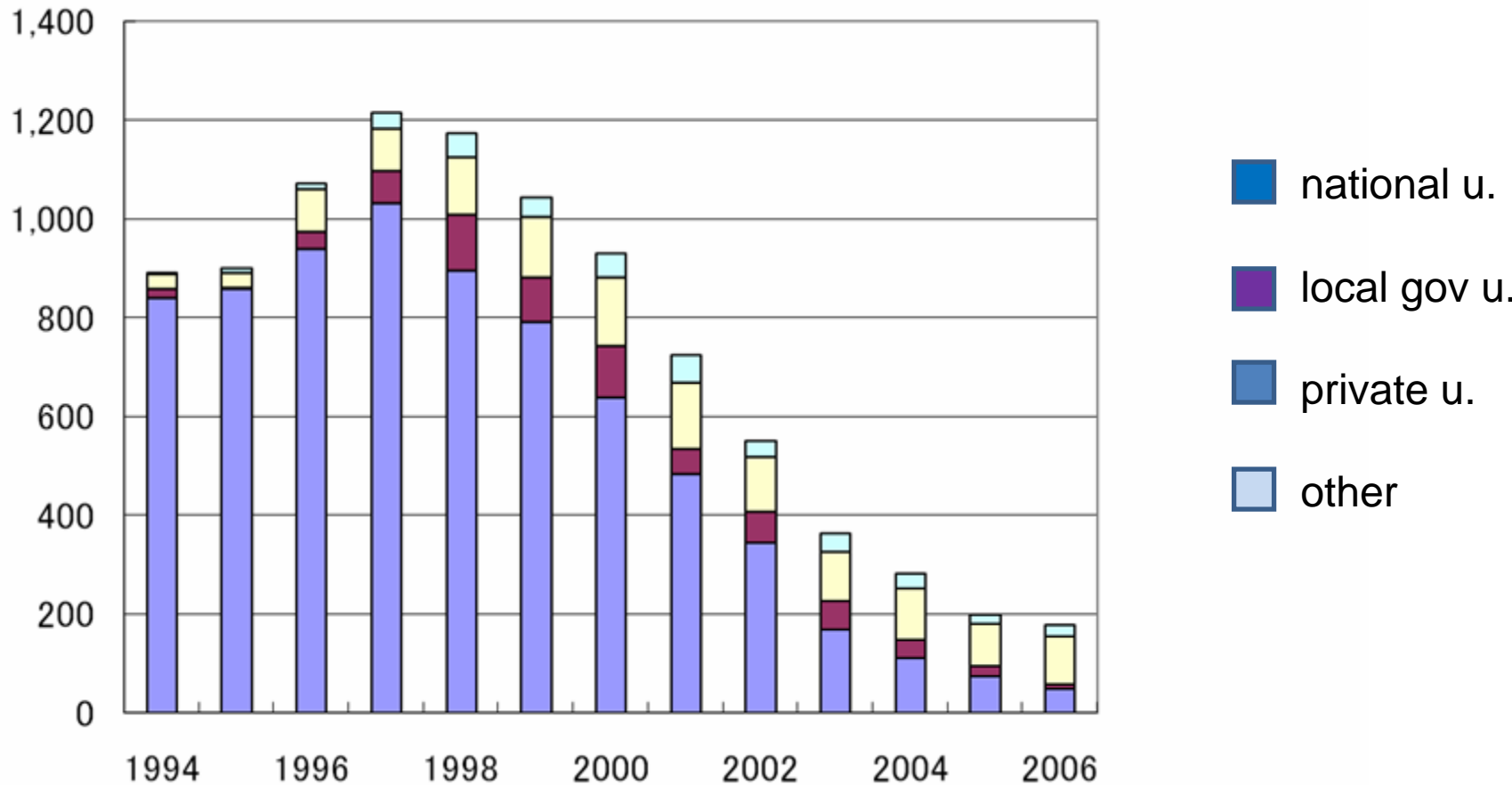
Nature

番号	BIBID	タイトル	1994年度	1995年度	1996年度	1997年度	1998年度	1999年度	2000年度	2001年度	2002年度	2003年度	2004年度	2005年度	2006年度
2	AA10687380	Oncogene	1.00	1.19	1.10	1.22	1.13	1.30	1.08	0.94	0.86	0.93	0.76	0.62	0.44
10	AA10627582	The EMBO journal	1.00	0.91	1.09	1.16	1.19	1.13	0.98	0.66	0.56	0.48	0.39	0.15	0.07
48	AA1084279X	Nature genetics	1.00	1.29	1.20	1.43	1.23	1.14	1.03	0.81	0.71	0.54	0.54	0.37	0.34
52	AA10668706	Leukemia	1.00	0.93	1.10	1.63	1.41	1.29	1.05	0.91	0.93	0.85	0.75	0.63	0.62
99	AA00752384	Nature	1.00	0.85	1.39	1.38	1.42	1.61	1.41	1.79	1.64	1.52	1.63	1.88	1.82

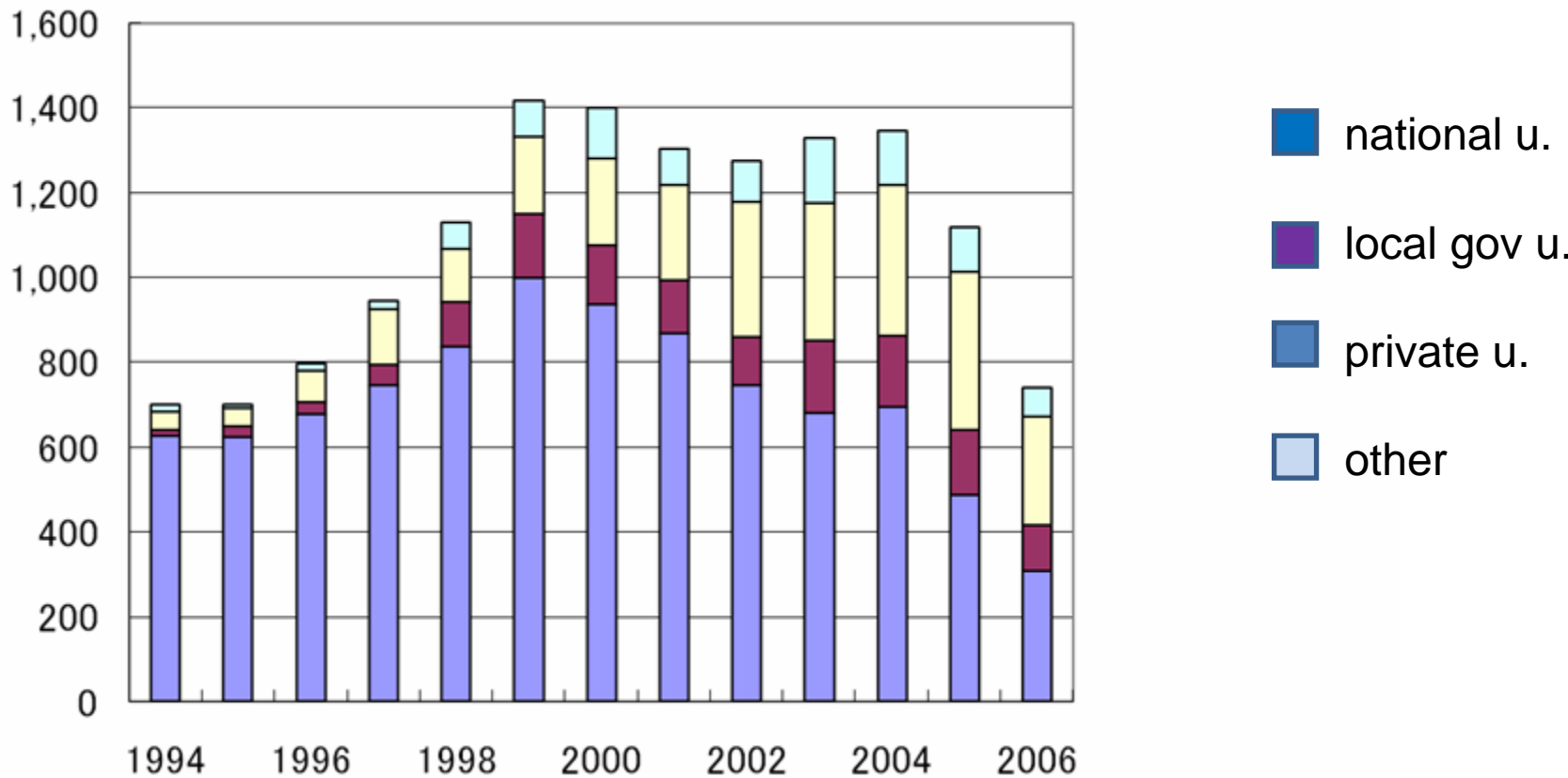
ACS

番号	BIBID	タイトル	1994年度	1995年度	1996年度	1997年度	1998年度	1999年度	2000年度	2001年度	2002年度	2003年度	2004年度	2005年度	2006年度
41	AA00564599	Biochemistry	1.00	0.96	1.06	1.01	1.48	1.55	1.35	1.31	1.08	1.02	0.96	0.82	0.53
76	AA00692602	Journal of the American Chemical Society	1.00	0.86	1.08	1.21	1.48	1.53	1.87	1.66	1.66	1.72	1.72	1.55	1.44
78	AA00704789	The journal of physical chemistry	1.00	1.08	1.27	0.92	0.94	0.83	0.94	0.82	0.67	0.59	0.63	0.40	0.39
79	AA00702411	Journal of medicinal chemistry	1.00	1.01	1.07	1.26	1.42	1.47	1.55	1.47	1.30	1.54	1.23	1.05	1.05
93	AA0071963X	Macromolecules	1.00	1.18	1.25	1.69	1.86	1.95	1.95	2.07	1.72	1.47	1.52	1.48	0.89

- *Genomics* on ScienceDirect: Changes in the number of requests from different kind of universities

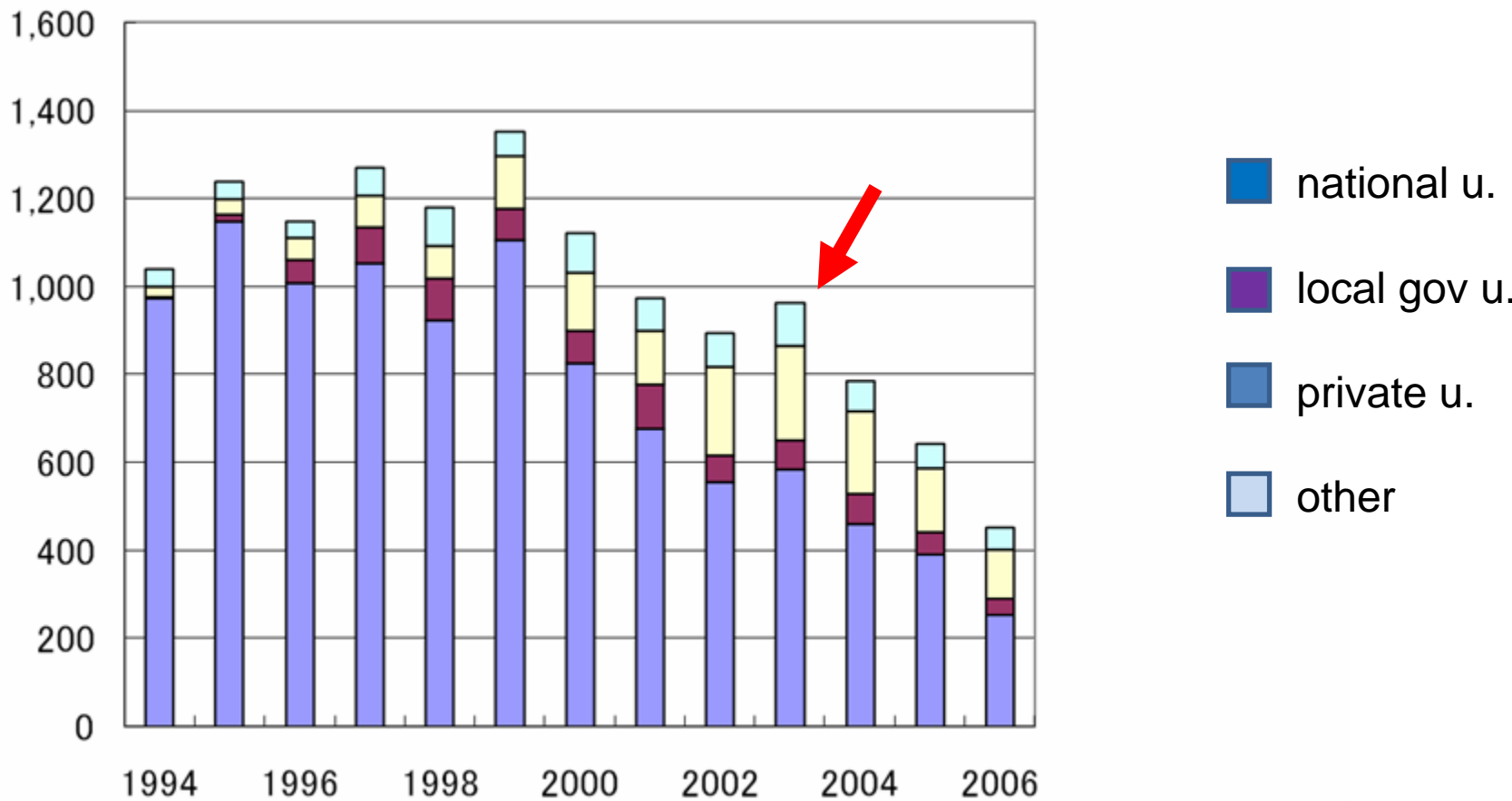


- Annals of the New York Academy of Sciences



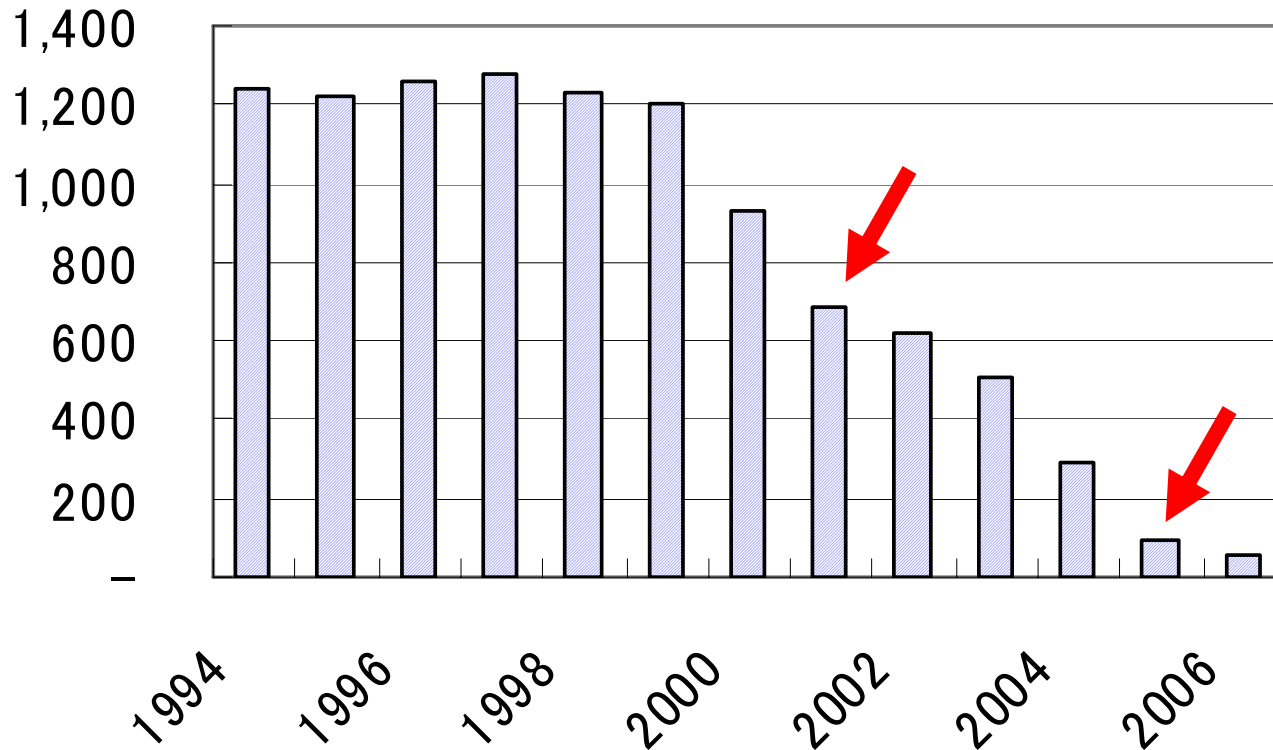
Nature

- Oncogene:



Open access journals seem to meet users' needs

- *Nucleic acids research*, currently an author pay journal



So my personal view now is:

- With everything on line, there is no need for libraries at least in the sense of storage of published print journals
- Just as big deal is disliked because libraries have buy unwanted titles, journal titles lose its meaning because they publish academically ok but rarely read articles
- But the truth, scholarship, teaching resides in the long tail(s). And there is no room for incarnated long tails in libraries in a small country like Japan
- Therefore digitization is inherently good, regardless of possible hidden agenda

Role of libraries

- Conventional librarians are an endangered species.
- Talk to researchers/faculty, but forget the established, who can't forget their successful experiences and concentrate on the young with helping tools, functioning as catalysts for new research
- Reverse the vector: Research created outside will be licensed and delivered on line, ie no need for libraries as physical storage, so concentrate on results on campus
- Collaborate nationally and internationally

Backgrounds for institutional repositories in Japan

- Approach from SPARC in 2001
 - just before 9/11
 - insertion of “dissemination from societies and universities” phrase in Negishi report (April, 2002), MEXT
- Shift in interest on the part of SPARC
 - creation of competitive market to advocacy of open access
- “Dissemination from university” phases survived and reinterpreted in 2006 report
 - NII’s “Cyber Science Infrastructure” idea

Cyber Science Infrastructure(NII)

- Higher education/research institute, nationwide computer network(SINET)
- Grid computing middleware(NAREGI) across SINET with supercomputers in universities (and some more)
- A network of over 100 institutional repositories and research institutes' servers serving as document and data repositories/providers on SINET
- NII serving as what? and who funds how? are interesting questions
- Awkward internationality
- Most scientists not interested so much
- Ideas are there, but made little use of

CURATOR: Japan's first repository in Chiba

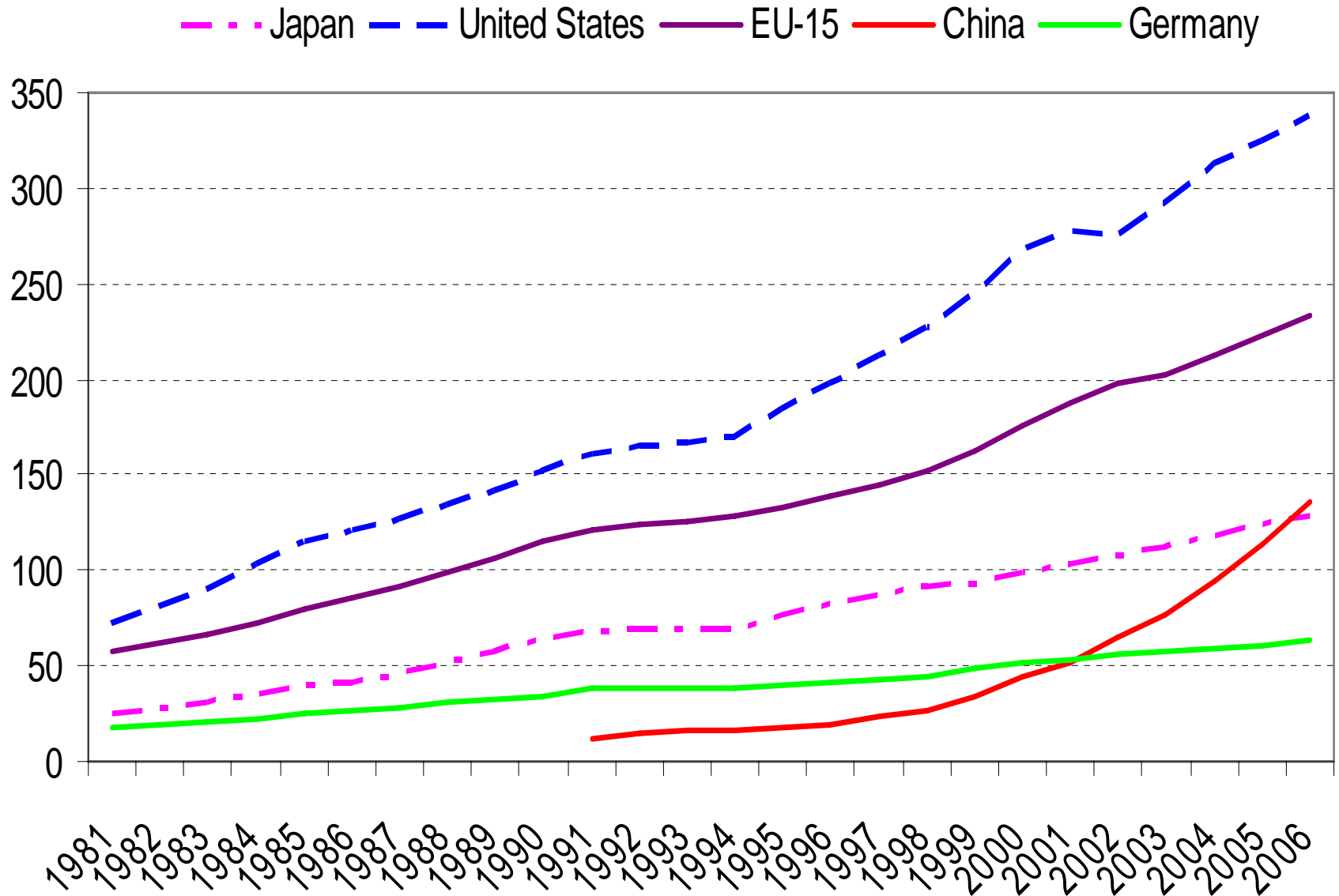
- All on its own, awarded JANUL's achievement of the year prize in 2006
- PPP1: Principle of Principled Promiscuity
 - Collect everything, all scholarly achievements on campus
- PPP2: Principle of Persistent Parsimony
 - Don't do anything which others can do, or which others can be asked to do
 - Hence, minimalist top page and search by Scirus

Threats to Japan's science and communication

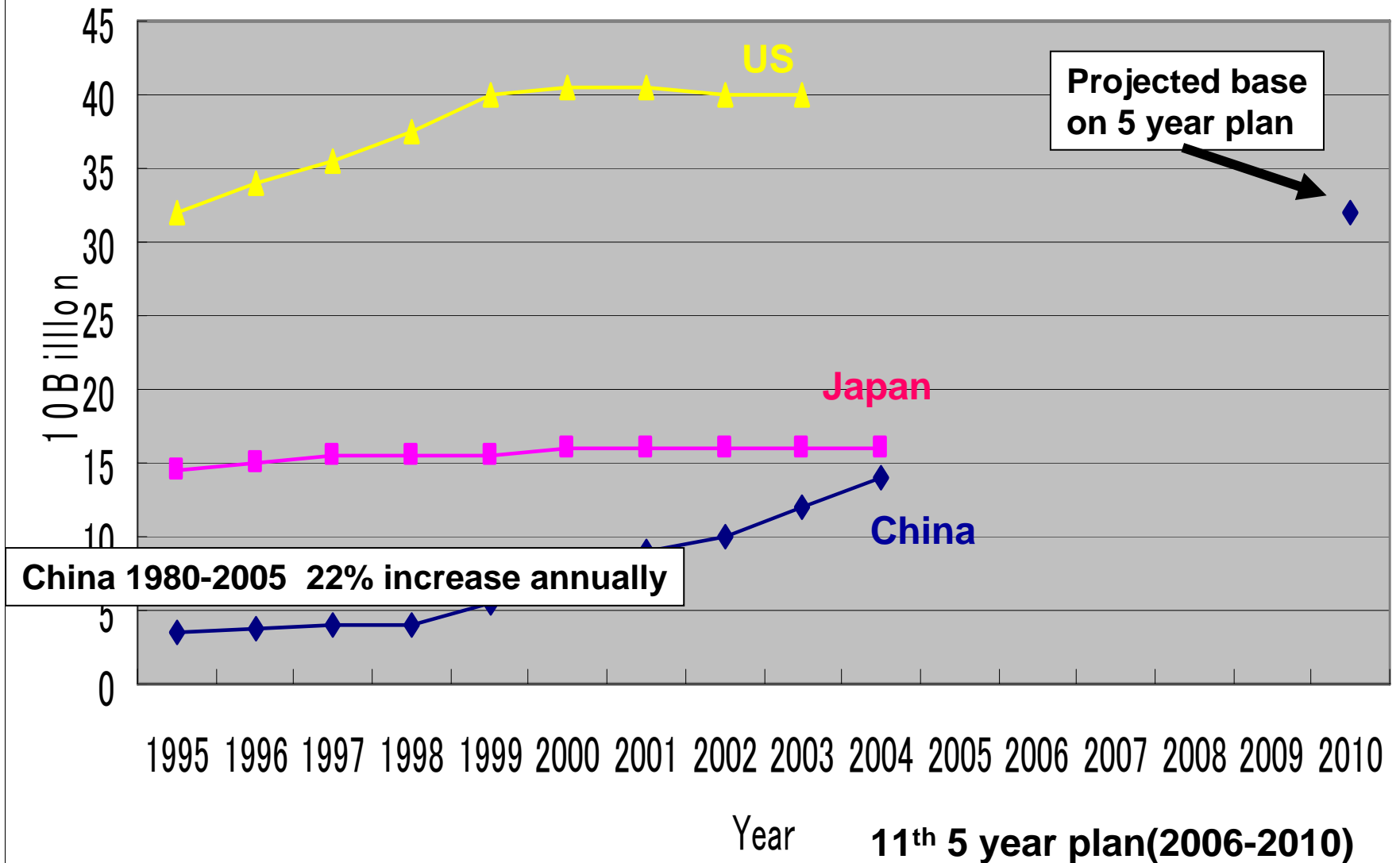
- China
 - Growing number of scientists, growing amount of research funding already having overtaken Japan
 - Growing huge intranet in many senses
 - Author/institution statistics not reliable due to a large number of foreign students in US/Japan/Europe
- University reform in Japan
 - Drive to competitiveness
 - Focus on education
 - No sense of bottom up cooperation, typically among libraries
 - future of NII's NACSIS utilities, JST's I&A database
 - Roles of agents going away

China overtook Japan in R&D funding (billion current PPP \$)

(The Science, Technology and Industry Outlook 2006, OECD)



S & T Funding



University reform in Japan: From 1990s on

- In short, it is a late-coming Thatcherian reform with no students added
 - Already 70% continue on to school, with 40% going to 4 year higher education institutions
- By naïve “Thatcherian” I mean budget cuts, forced competition, industry friendliness, deregulation and such
- Japanese universities are too small on the average, with hard-to-destroy hierarchy

Gloomy future

- **More funding → More publishing → More spending**
 - Can Japanese universities/university libraries keep up with the growth of scholarly communication?
 - Can Japanese society journals maintain quality of publishing(business as well as academic)?
 - Can Japanese universities maintain their institutional repositories for ever, or should they?
 - Can Japan support its scientific activities from their pockets for ever?
 - Is worldwide scholarly communication sustainable as it is? Or should or could there be any “breakthrough” in anything, given that institutional repositories will not help?
- **No answers so far for any of the above**