



DRFIC2009 Session 3. Attitudes towards diversity
Friday, December 4, 2009

RePEc's impact on the use of working papers in institutional repositories

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Table of contents

- Background
- Methods
- Results
- Conclusion



Table of contents

- **Background**
- **Methods**
- **Results**
- **Conclusion**



Current status of Institutional Repository usage

- S. SATO & H. ITSUMURA (2009)
 - Most users found repository content through **search engines**.
 - **English papers** are more likely to be accessed through search engines than are Japanese.
 - Content translated into **machine-editable text** were downloaded many times more frequently than those that have not been translated.



Current status of Institutional Repository usage

- Most users found repository content through **search engines**.
 - Almost all of them were via **Google**.
 - Does PageRank decide how many times repository content will be used?
- One of few exceptions: **RePEc**



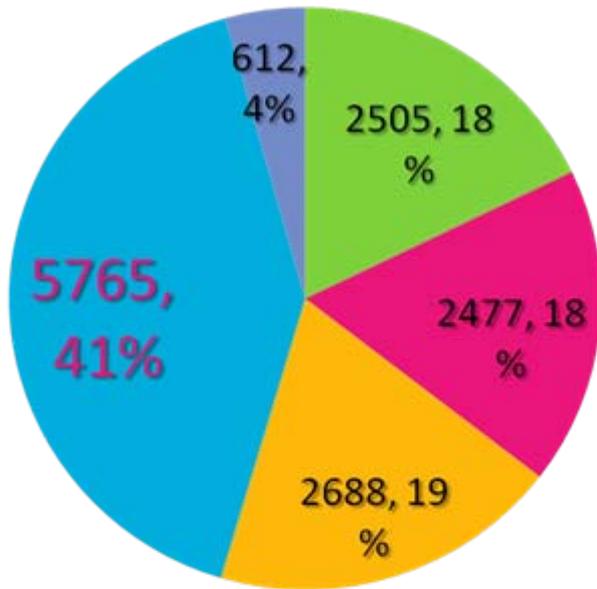
What is RePEc?

- Research Papers in Economics (<http://repec.org>)
- A subject repository to promote scholarly communication in economics
- Includes 240,000 working papers
- Some Japanese institutions including Institute of Developing Economies, Japan External Trade Organization (IDE-JETRO) have registered their contents



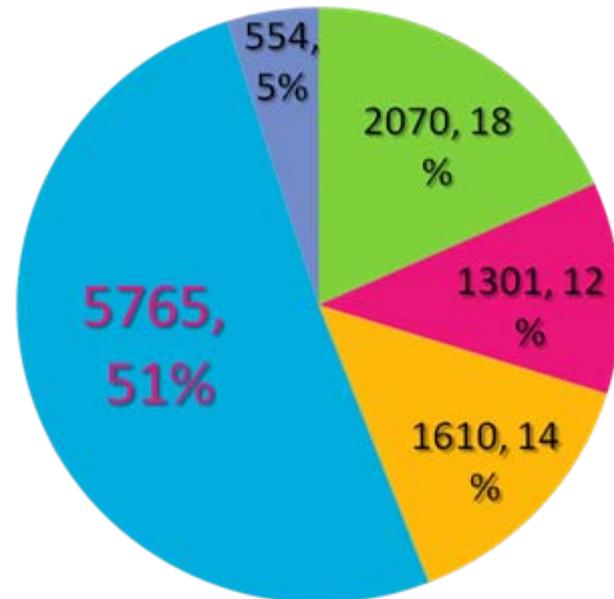
Types of Referrals to ARRIDE (IDE-JETRO)

Types of referrals to
all content



- Direct access
- Thorough search engine
- Through other pages
- Thorough metadata page
- Through RePEc

Types of referrals to content
added to RePEc



- Direct access
- Thorough search engine
- Through other pages
- Thorough metadata page
- Through RePEc



More issues

- What impact does RePEc have on institutional repository usage?
 - Number of downloads
- What will be used through RePEc?
 - Content attributes
- Who will use it?
 - User domains
- Is RePEc different from other referrals?



Table of contents

- Background
- **Methods**
- Results
- Conclusion



Methods

- **Object repositories**
 - ARRIDE (The Academic Research Repository at the Institute of Developing Economies)
 - HERMES-IR (Hitotsubashi University Repository)
- **Object contents**
 - ARRIDE : Content added to RePEc / $N=240$
 - HERMES-IR : All working papers / $N=1,648$
(including 900 items added to RePEc)



Methods

- Research period
 - ARRIDE : 2008.1-12
 - HERMES-IR : 2007.12-2009.8
- Usage log analysis



Content registered to RePEc in ARRIDE

- **240/640** (37.5%) were registered to RePEc
- Titles registered to RePEc
 - “IDE Discussion Paper”: **179 items**
 - “The Developing Economies”: **61 items**
- All content registered to RePEc is in **English**.
- IDE-JETRO began to register items to RePEc before our analysis.

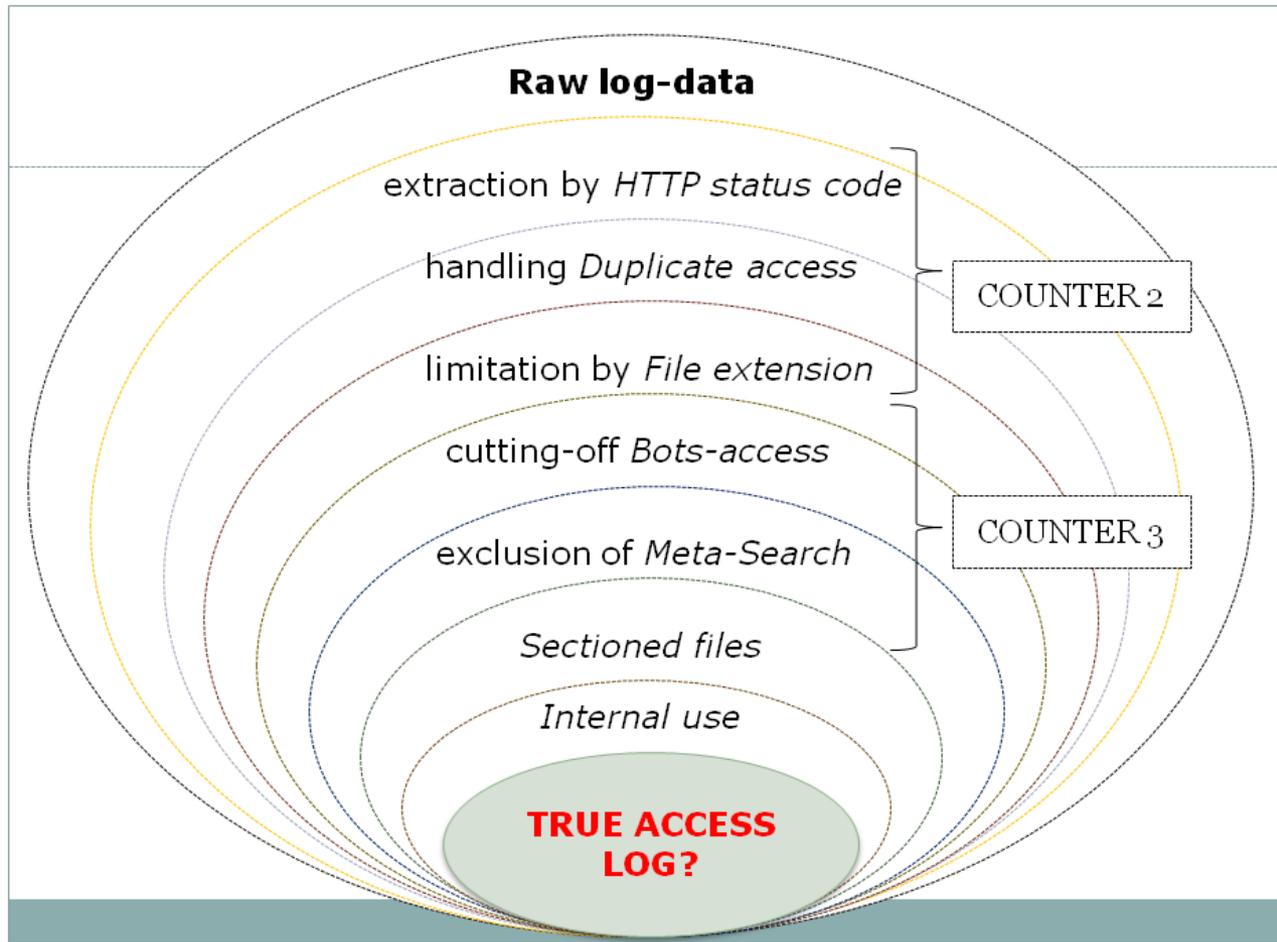
Working Papers in HERMES-IR

Table 1. Languages of Working Papers in HERMES-IR

	Japanese papers	English papers	Other Languages papers	Total
Not added to RePEc	222	516	10	748
Added to RePEc*	275	619	6	900
Total	497	1135	16	1,648

* All papers were registered to RePEc after April 2009.

Log filtering procedure



Y. Sato(2008).

The original version is Japanese and English version was offered by Y. Sato.¹⁴



Table of contents

- Background
- Methods
- Results
- Conclusion

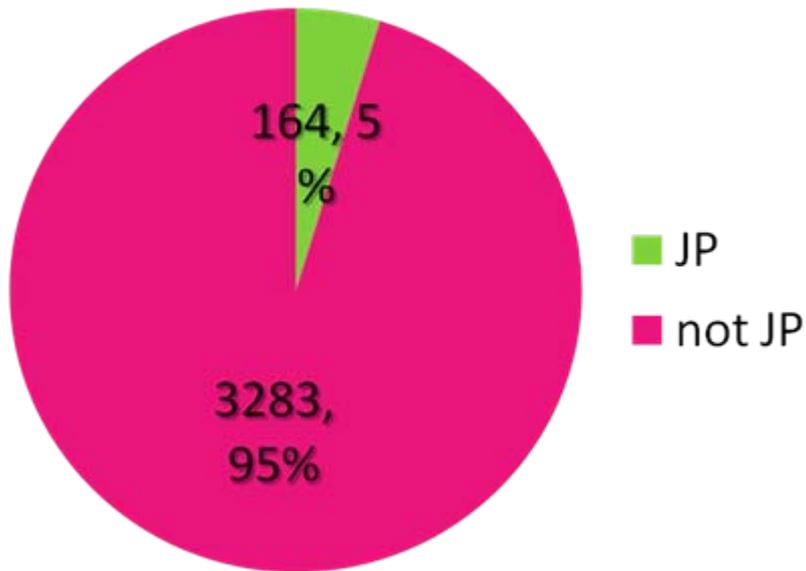


(1) ARRIDE



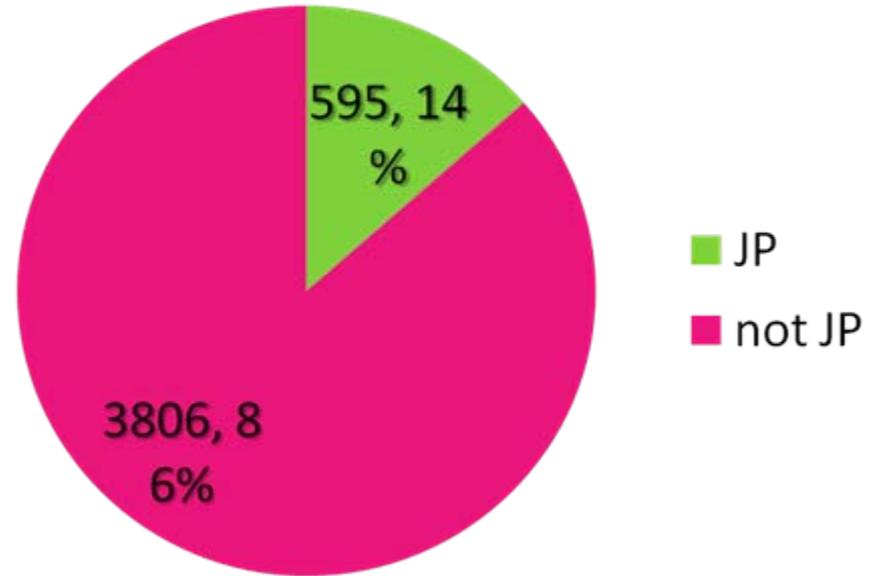
Number of user domains for content added to RePEc (ARRIDE)

**User domain
(Through RePEc/ JP or not JP)**



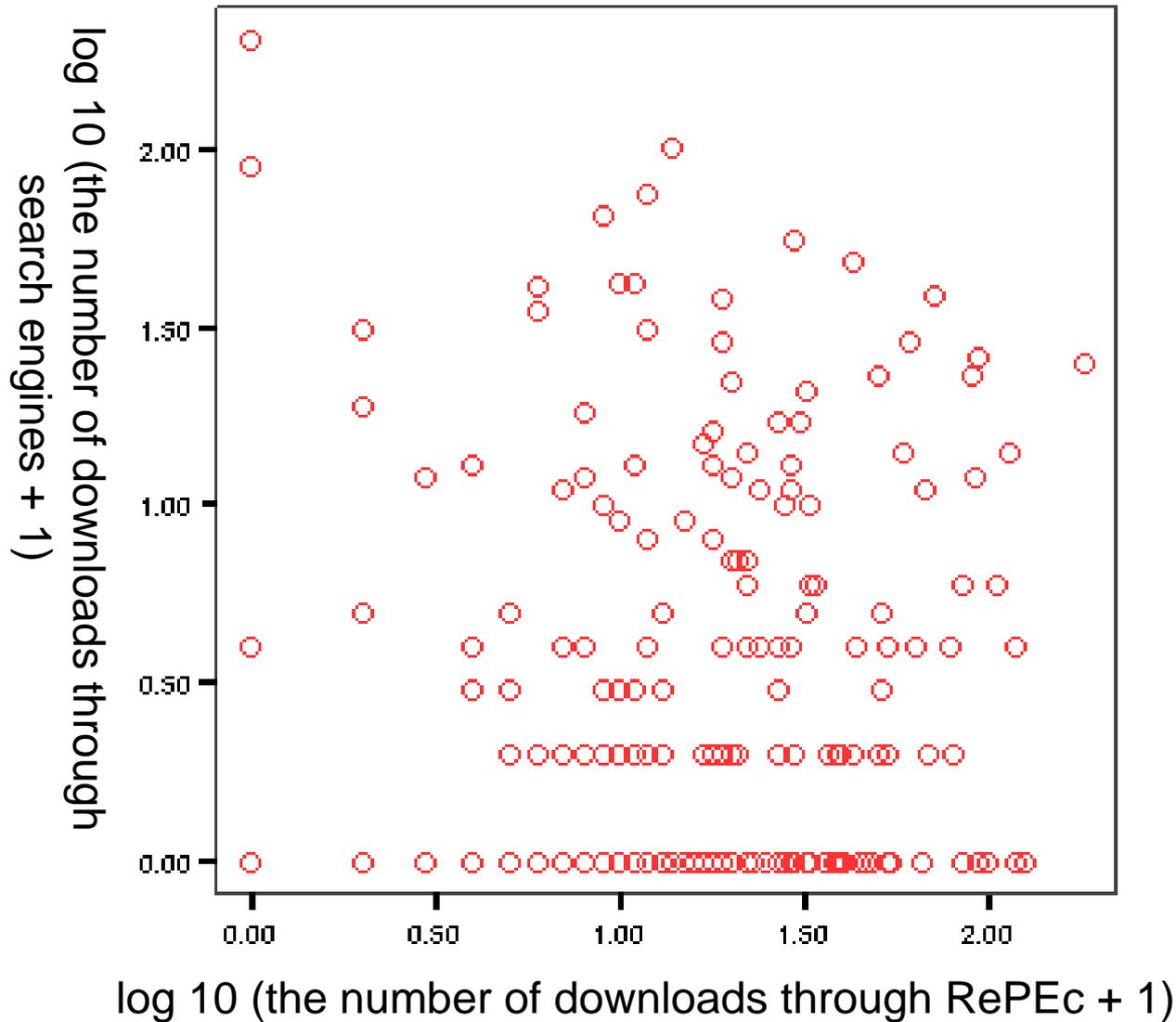
Total: 3,447 downloads

**User domain
(Through other referrals/
JP or not JP)**



Total: 4,401 downloads

Correlation between the number of downloads through RePEc and through Search engines (ARRIDE)





Correlation between the number of downloads through RePEc and through other referrals (ARRIDE)

	Direct access	Through metadata page	Through search engines	Through RePEc
Direct access		0.34(**)	0.40(**)	0.43(**)
Through metadata page			0.08	0.53(**)
Through search engines				0.10
Through RePEc				

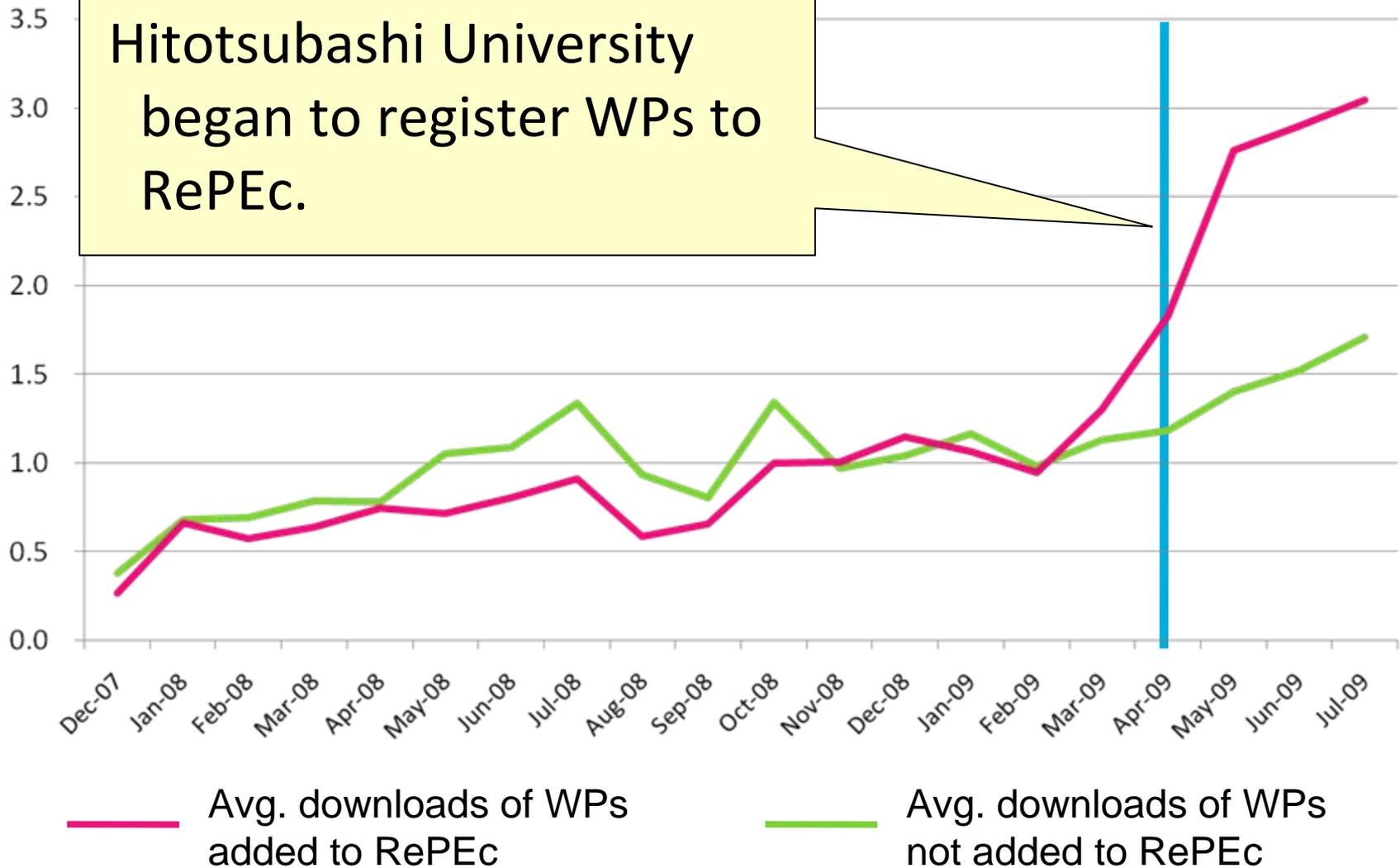
** Statistically significant ($p < 0.01$)



(2) HERMES-IR

Monthly downloads of Working Papers

in LIPMES-IR



Relationship between RePEc registration and the number of content downloads

Table 2. RePEc registration and average number of downloads (After April 2009)

		Total downloads	Types of referrals					User domains	
			Direct access	Through metadata page	Through search engines	Through RePEc	Through other referrals	JP	Not JP
Not added to RePEc	Avg.	5.8	1.0	1.7	3.0	0.0	0.2	2.8	1.4
	Med.	2.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Added to RePEc	Avg.	10.4	2.0	2.6	3.7	1.7	0.4	4.1	3.2
	Med.	5.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0
Total	Avg.	8.3	1.5	2.2	3.4	0.9	0.3	3.5	2.4
	Med.	4.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0

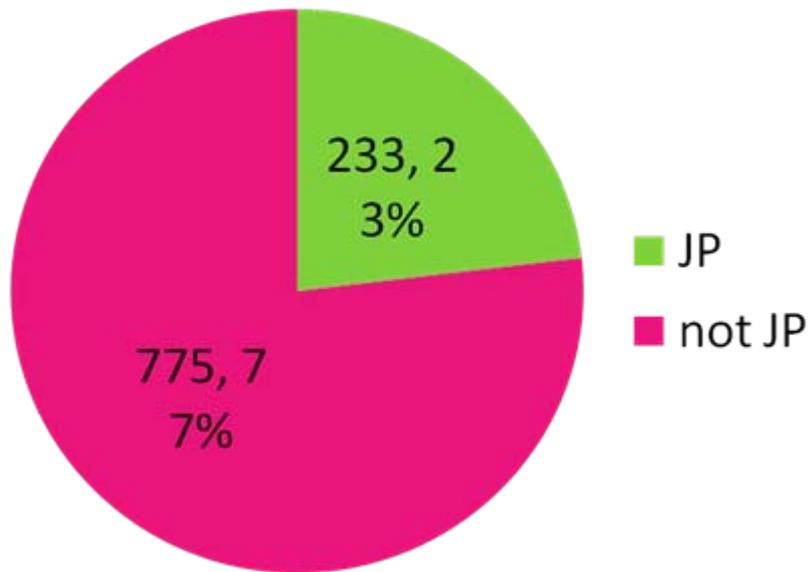
Relationship between language and the number of downloads through RePEc

Table 3. Language and average number of downloads
(Content added to RePEc/After April 2009)

		Total downloads	Types of referrals					User domains	
			Direct access	Through metadata page	Through search engines	Through RePEc	Through other referrals	JP	Not JP
Japanese papers	Avg.	15.9	2.3	4.4	7.6	0.9	0.7	10.3	1.8
	Med.	10.0	1.0	3.0	3.0	0.0	0.0	7.0	1.0
English papers	Avg.	8.0	1.8	1.8	2.0	2.0	0.3	1.3	3.9
	Med.	4.0	1.0	1.0	0.0	1.0	0.0	1.0	1.0
Total	Avg.	10.4	2.0	2.6	3.7	1.7	0.4	4.1	3.2
	Med.	5.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0

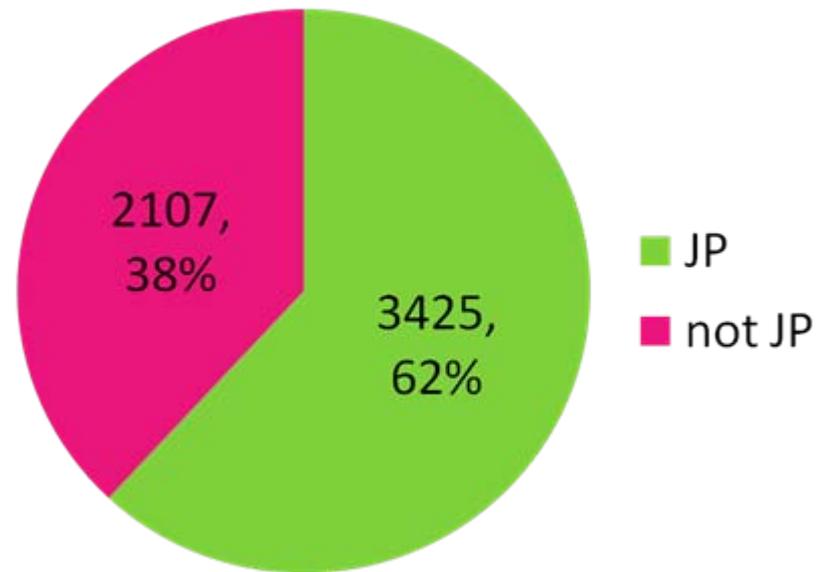
Number of user domains for content added to RePEc (HERMES-IR)

**User domain
(Through RePEc/ JP or not JP)**



Total: 1,008 downloads

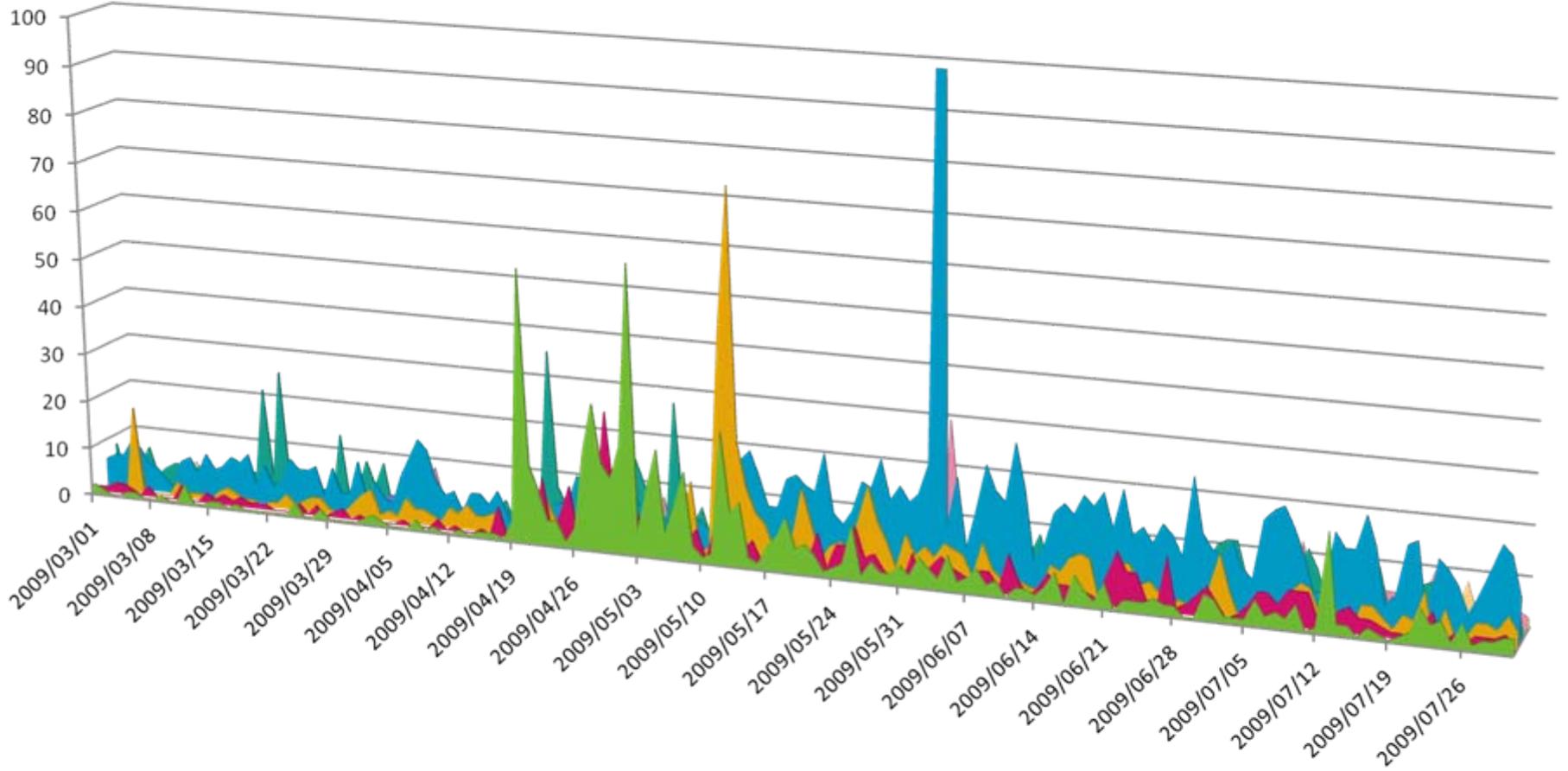
**User domain
(Through other referrals/
JP or not JP)**



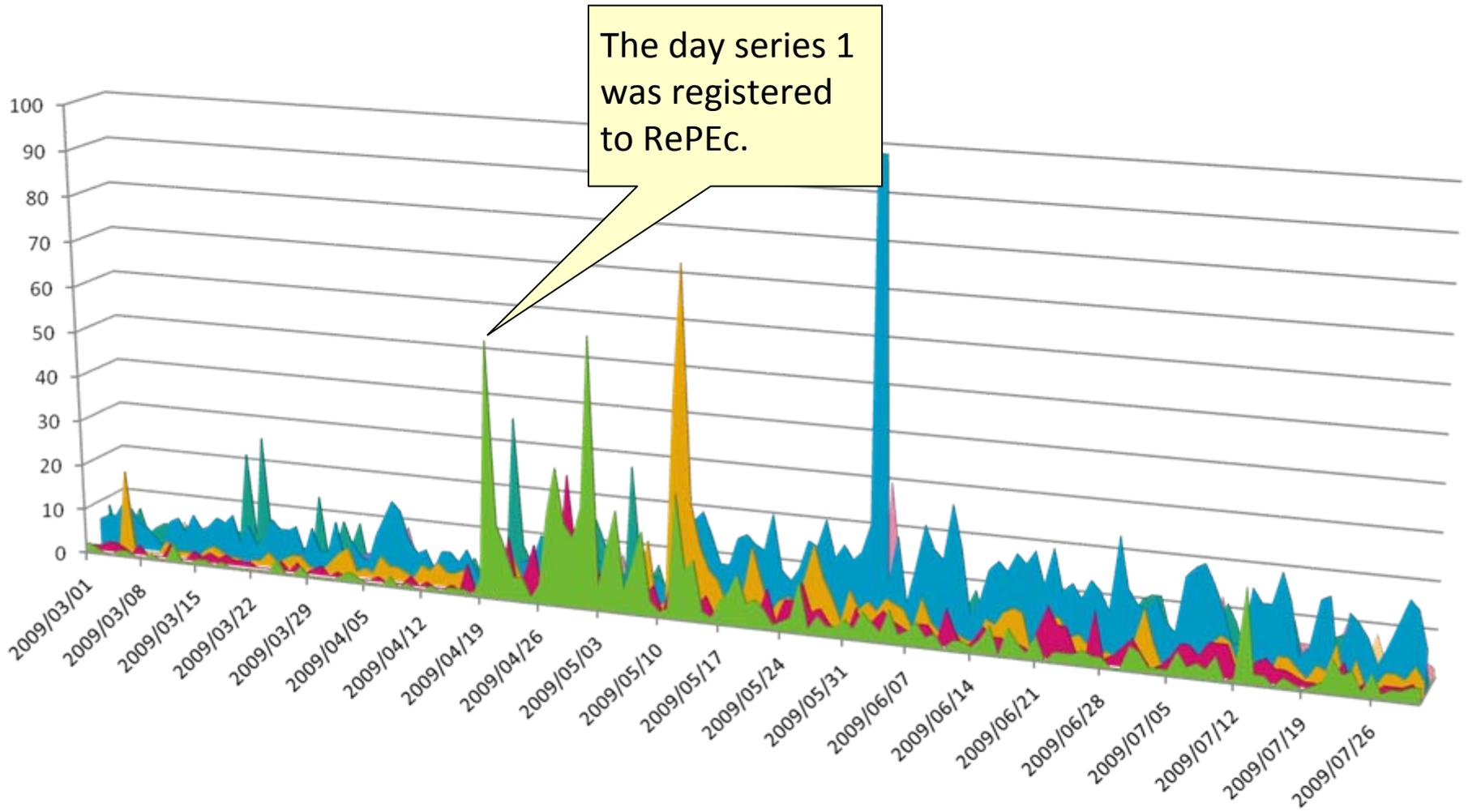
Total: 5,532 downloads

Working Paper Series Titles

	Series Title	All items	Written in Japanese	Written in English	Other languages	RePEc registration date
1	CCES Discussion Paper Series	20	2	18	0	2009/4/20
2	IIR Working Paper	59	12	47	0	2009/4/17
3	Discussion papers / Graduate School of Economics, Hitotsubashi University	141	26	115	0	2009/4/30
4	CEI Working Paper Series	178	19	159	0	2009/5/13
5	Working Paper Series / Center for Japanese Business Studies	50	39	11	0	2009/6/11
6	Discussion paper / Setting Options for Fair Distribution of Well-being among Different Generations, PIE	283	107	171	5	2009/6/15
7	Discussion paper / Economic Analysis of Intergenerational Issues, PIE	40	14	26	0	2009/6/16
8	PIE/CIS Discussion paper	110	49	60	1	2009/6/16
9	RRC Working Paper Series	19	7	12	0	2009/7/24



■ series1 ■ series2 ■ series3 ■ series4 ■ series5 ■ series6 ■ series7 ■ series8 ■ series9



■ series1 ■ series2 ■ series3 ■ series4 ■ series5 ■ series6 ■ series7 ■ series8 ■ series9

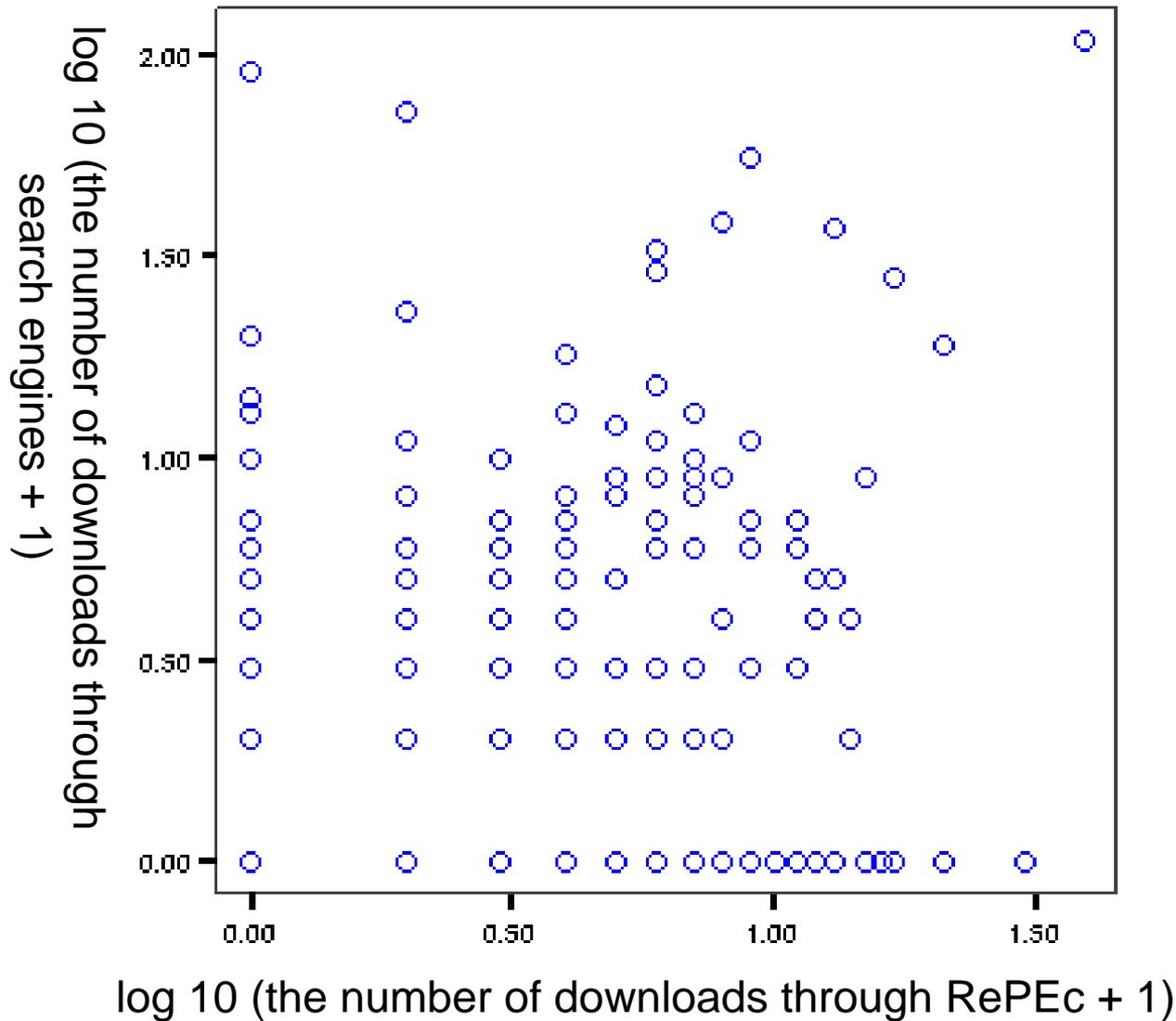


Avg. downloads before/ after RePEc registration

	Series Title	RePEc registration date	A: Avg. downloads per day before RePEc registration	B: Avg. downloads per day after RePEc registration	B / A
1	CCES Discussion Paper Series	2009/4/20	0.7	14.0	21.0
2	IIR Working Paper	2009/4/17	0.6	6.1	10.1
3	Discussion papers / Graduate School of Economics, Hitotsubashi University	2009/4/30	3.5	11.3	3.3
4	CEI Working Paper Series	2009/5/13	3.3	22.6	6.9
5	Working Paper Series / Center for Japanese Business Studies	2009/6/11	1.1	1.0	0.9
6	Discussion paper / Setting Options for Fair Distribution of Well-being among Different Generations, PIE	2009/6/15	5.2	7.7	1.5
7	Discussion paper / Economic Analysis of Intergenerational Issues, PIE	2009/6/16	0.6	1.0	1.6
8	PIE/CIS Discussion paper	2009/6/16	2.2	3.5	1.6
9	RRC Working Paper Series	2009/7/24	0.6	5.0*	8.3

* Calculated from 10 days of download statistics. Others were from a month's worth.

Correlation between the number of downloads through RePEc and through Search engines (HERMES-IR)



Correlation between the number of downloads through RePEc and through Search engines (HERMES-IR)

	Direct access	Through metadata page	Through search engines	Through RePEc
Direct access		0.22(**)	0.41(**)	0.43(**)
Through metadata page			0.26(**)	0.11(**)
Through search engines				0.27(**)
Through RePEc				

** Statistically significant ($p < 0.01$)



Table of contents

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Conclusion

- Registration with RePEc has a strong impact on **English papers** and users **from overseas**.
- RePEc helps users find content **that cannot be found through search engines**.
- RePEc plays a central role as one of the **various ways to find repository content**.



Acknowledgements

- Yoshinori Sato, Tohoku Gakuin University
- Koji Otagaki, Hitotsubashi University Library
- Susan Skomal, BioOne
- Yuko Nagai, The Zoological Society of Japan
- Institute of Developing Economies, Japan External Trade Organization
- “Zoological Science meets Institutional Repositories” Project
- This research was partially supported by the MEXT, Grant-in-Aids for scientific research (c), 20500219, 2008-2009.



Thank you for
your attention!

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