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1	6
1.1	6
1.2	μ μ	6
1.3	μ μ	7
1.3.1	μ	7
1.3.2	μ μ	10
1.4	μ	11
2	13
2.1	13
2.2	μ - μ μ	21
2.2.1	μ (Data Envelopment Analysis) - μ (Free Disposal Hull)	21
2.2.2	(Stochastic Frontier Approach)	25
2.2.3	(Thick Frontier Approach)	26
2.2.4	μ (Distribution Free Approach)	26
3	28
3.1	μ	28
3.1.1	μ μ Farrell	42
3.1.2	CCR DEA μ μ Farrell	44
3.1.3	μ Farrell μ	46
3.1.4	« μ » μ VRS – The treatment of VRS	47
3.1.5	μ μ – The overall method	48
3.1.6	– Generalizing to multiple outputs	50
4	52
4.1	52
4.2	μ	52
4.2.1	μ	53
4.2.2	μ μ	63
4.3	μ	65
4.3.1	-	67
4.4	μ DEA	72
4.5	μ μ	82
4.6	μ Diamond	84
5	86
5.1	μ μ	86
	88
μ	93

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1.1

2004, ISI's Web of Science, Scopus Elsevier Google Scholar.

Rosvall and Bergstrom, 2008, Klavans and Boyack, 2009a, Leydesdorff and Rafols, 2009 and De-Moya Anegon *et al.* 2008).

Liebowitz and Palmer (1984), Laband and Piette (1994), Kalaitzidakis, Mamuneas and Stengos (2003), Palacio-Huerta and Volij (2004), Liner and Amin (2006), Kodrzycki and Yu (2006), Kóczy and Strobel (2007) and Ritzberger (2008).

1.2

(Weingart, 2005) . . . O Francescet (2010)
) Science» «Google Scholar»,)
 «Web of Science» «Google Scholar».
 (Garfield 1979, Braun *et al.* 2006, Bollen *et al.* 2006)

Etxebarria G. Gomez-Uranga M., (2010),
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 μ μ (ehreer, 2007). Jennings *et al.* (2009),
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 2007). μ μ μ μ
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 μ Lee Evans (1985) μ .

³ : Complutense University in Madrid, University of Barcelona, Autonomous University of Barcelona, University of the Basque Country

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 μ «construction management journals».
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 component, betweenness centralization, average clustering coefficient. μ
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 μ , «business logistics journals», «transportation journals»
 «operation research management journals». μ μ μ
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 Sumsion *et al.* (2008), μ
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 Hagendijk Smeenk (1989), ISI
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 per paper SNIP). μ μ ,
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 Kalaitzidakis *et al* μ 2003,
 2003-2008, μ μ
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 μ 2003 μμ 169
 2008 μ 209. μ
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 Kodrzycki, Y.K. and P. Yu, (2006), μ
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Diamond, (1989) : American Economic Review, Econometrica, the Journal of Political Economy, the Review of Economics and Statistics and the Review of Economic Studies.

et al. (2003), 1987. Katerattanakul 5868 27 1995-1998.

(computing journals) : MISQ, ISR, CACM, JACM, IEEESE. E Linton Thongpapanl (2004) 10

Liebowitz Palmer (1984), « » 1980.

McKenzie (1978). Laband Piette, (1994) Liebowitz Palmer, 1965-1969

50 , IEA⁶ Social Science Citation Index. , μ μ μ⁷.

1970-1990 Liebowitz Palmer (1984),

⁶ : Canadian Journal of Economics, Applied Economics, Journal of Financial and Quantative Analysis, Journal of Transport Economics and Policy, Journal of Economic Issues, Journal of Human Resources and the Journal of Economic Theory.

⁷ : Accounting Review, American Historical Review, American Political Science Review, American Statistician, Foreign Affairs, Management Accounting, Michigan Academician.

2.2 μ - μ μ

2.2.1 μ (Data Envelopment Analysis)- μ (Free Disposal Hull)

μ μ Data Envelopment Analysis (DEA) Free
Disposal Hull (FDH) μ . μ μ

μ μ . DEA

μ μ μ μ
(envelopment surface), μ μ μ .

μ μ ,

μ μ μ μ

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μ μ (CRS), μ Charnes *et al.*,

μ μ μ (VRS), μ Banker *et al.*

1984 ,

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(Banker *et al.*, 1984). Η μ μ ,

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DEA FDH, μ μμ

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Cooper *et al.*, 2006)

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 . (Ramanathan, 2003)
 μ Halkos Tzeremes, (2007) μ
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 2009b μ μ μ
 2003-2006.
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 (Halkos Tzeremes, 2009a). μ μ ,
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 (Halkos Tzeremes, 2009c). μ
 μ μ μ 1996-2006
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 . , μ μ
 μ μ Panel Data.
 μ μ μ μ
 , μ (. Ferrier Lovell, 1990, Ferrier et
 al. 1993, Cummins Zi, 1998). A μ
 μ SFA, TFA DFA μ μ μ
 . μ , μ
 DEA μ μ SFA, TFA DFA.

2.2.2 *(SFA Stochastic Frontier Approach)*

SFA μ μ μ
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 μ (standard normal) (Aigner *et al.*
 1977). H μ
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 DFA-P-WITHIN μ μ μ .
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 . DFA-P-GLS, μ μ .
 μ , μ μ μ ,
 μ μ μ . , DFA-P TRUNCATED
 1% μ , μ μ .
 . DFA μ μ μ .
 μ μ μ DFA
 SFA TFA «intuitively appealing» μ μ .
 μ μ μ μ μ .
 . (Bauer *et al.*, 1998).

$$\frac{\sum_{r=1}^s u_r \cdot y_{rj}}{\sum_{i=1}^m u_i \cdot x_{ij}} \leq 1, \quad j=1, \dots, n, \quad u_r, u_i \geq 0, \quad r=1, \dots, s, \quad i=1, \dots, m.$$

y_{rj}, x_{ij} () j -
 u_r, u_i μ μ
 μ . μ μ , μ
 μ . μ μ
 (μ),
 μ "0". μ μ
 μ μ .
 μ x_{ij} y_{rj} ,
 μ μ μ
 . μ μ μ μ μ μ
 μ , μ .
 (1), E_r

x μ (1):

$$\max h_0 = \frac{u y_0}{u x_0}$$

μ :

$$\frac{u y_R}{u x_R} \leq 1$$

$$\frac{u y_r}{u x_r} \leq 1$$

$$u, v \geq 0$$

$r=0$ μ μ .
 u^*, v^* μ μ . $y_{E \geq} y_r$
 $x_R = x_r = x$, $u^* y_R = v^* x_B$ μ $x_0 = x$,
 $E_r = y_r / y_B$. μ μ
 , μ μ μ μ « »
 μ . μ ,

$$(3) \quad \mu \quad \mu \mu \quad \mu \mu \quad \mu, \mu$$

$\mu :$

$$\min g_0 = \sum_{i=1}^m x_{i0} \quad (4)$$

$\mu :$

$$-\sum_{r=1}^s \mu_r \cdot y_{rj} + \sum_{i=1}^m x_{ij} \geq 0,$$

$$\sum_{r=1}^s \mu_r \cdot y_{r0} = 1, \quad \mu_r, x_{ij} \geq 0$$

$$\mu \quad \mu \quad (4)$$

$$\mu \quad \mu \mu \quad - \quad \mu$$

$$\mu \quad \mu \quad \mu \quad . \quad ,$$

$\mu \quad \mu \quad :$

$$x_{ij} = t u_{ij}, \quad i=1, \dots, m,$$

$$\mu_r = t u_r, \quad r=1, \dots, s,$$

$$t^{-1} = \sum_r u_r \cdot y_{r0},$$

$t > 0 \quad \mu :$

$$\min f_0 = \frac{\sum_{i=1}^m u_i \cdot x_{i0}}{\sum_{r=1}^s u_r \cdot y_{r0}} \quad (5)$$

$\mu :$

$$\sum_{i=1}^m u_i \cdot x_{ij} - \sum_{r=1}^s u_r \cdot y_{rj} \geq 0, \quad j=1, \dots, n, \quad u_i, u_r \geq 0,$$

$$\begin{aligned} & \mu \quad \mu \quad \mu \quad \mu \quad (4). \quad (5) \quad \mu \quad (2). \quad , \\ (2) \quad (1). \quad (4) \quad (5) \end{aligned}$$

$$\begin{aligned} & \mu \quad \mu - \mu \mu \quad (\mu -) \quad \mu \quad , \\ \mu \quad \mu \mu \quad , \quad (4), \mu \quad \mu \quad f_0 \quad h_0 \\ \mu \quad u_i, u_r \geq 0. \end{aligned}$$

$$\begin{aligned} & \mu \quad : \\ f_0 = g_0 = z_0 \quad (6) \end{aligned}$$

$$\begin{aligned} & : \\ h_0 = \frac{1}{z_0}. \quad (7) \end{aligned}$$

$$\begin{aligned} & , \quad \mu \quad \mu \quad \mu \quad . \quad \mu \\ & \mu \quad (4) \quad (3) \quad f_0 > 1 \\ h_0 < 1, \mu \quad \mu \end{aligned}$$

$$f_0 = h_0 = 1. \quad (8)$$

, Charnes *et al.* (1978) μ (slack variables) $\mu -$:

$$P_j = \begin{pmatrix} Y_j \\ X_j \end{pmatrix}, \quad (9)$$

$j=1, \dots, n,$

$$\begin{aligned} & Y_j \quad \mu \quad \mu \quad y_{rj}, r=1, \dots, s \\ X_j \quad \mu \quad \mu \quad x_{ij}, i=1, \dots, m. \\ \mu \quad (3) \quad \mu \quad \mu \quad : \end{aligned}$$

$$\max z_0 \quad (10)$$

μ :

$$\sum_{j=1}^n X_j \cdot j \leq X_0,$$

$$j \geq 0, \quad j=1, \dots, n.$$

: μ μ μ

$$z_0, s^{*+}, s^{*-}, j, \tag{11}$$

$j=1, \dots, n,$

$$\begin{aligned} & s^{*+} \quad \mu \quad \mu - \quad \mu \\ & \mu \quad \mu \quad s^{*-} \quad \mu \quad \mu - \\ & \mu \quad \mu \quad \mu \quad \mu \quad z_0 > 1 \\ & \mu \quad (6) - (8) \end{aligned}$$

.

μ : s^{*+} , ,

μ μ j μ μ ,

s^{*-} , μ X_0

$X_0 - s^{*-}$,

() μ μ $z_0^* = 1$ μ (1) (2)

μ μ

μ μ μ .

, μ μ

:

- i. $z_0^* = 1$
- ii. μ μ . (12)

(13). $\mu :$

$$-\sum_{j=1}^n Y_j \cdot \hat{z}_j^* + Y_0 \cdot \hat{z}_0^* \cdot z_0^* \leq -\sum_{j=1}^n Y_j \cdot \hat{z}_j^* + (Y_0 \cdot z_0^* + s^{*+}) \cdot \hat{z}_0^* \leq 0$$

$$\sum_{j=1}^n X_j \cdot \hat{z}_j^* \leq X_0 - s^{*-} \leq X_0$$

$$s^{*+} \quad s^{*-} \quad \mu - \quad \cdot \quad , \quad \mu$$

$$\mu \quad (10) \quad \mu \quad \hat{z}_0^* \quad z_0^* \quad j$$

$j \cdot \quad , \quad \mu \quad :$

$$\max z_0 \geq z_0^* \cdot \hat{z}_0^* > z_0^*$$

$$\hat{z}_0^* \geq 0. \quad \mu \quad , \quad z_0^* = \max z_0, \quad \cdot \quad \mu \quad \mu$$

$$, \quad z_0^* = 1 \quad \mu \quad \mu$$

(13).

$$\mu \quad j^*, j=1, \dots, n, \quad \mu \quad (10)$$

$$\mu \quad (13) \quad \mu \quad \mu \quad ,$$

$$\mu \quad \hat{s}^{*-} \quad \hat{s}^{*+} \quad \mu \quad \mu \quad . \quad , \mu$$

(11):

$$-\sum_{j=1}^n Y_j \cdot z_j^* + Y_0 \cdot z_0^* + s^{*+} = 0$$

$$\sum_{j=1}^n X_j \cdot z_j^* = X_0 - s^{*-}.$$

$$z_j^* \quad \mu \quad \mu \quad \mu \quad \mu \quad \hat{z}_0^* = 1. \quad :$$

$$-\sum_{j=1}^n Y_j \cdot z_j^* + (Y_0 \cdot z_0^* + s^{*+}) \cdot \hat{z}_0^* = 0$$

$$\sum_{j=1}^n X_j \cdot z_j^* = X_0 - s^{*-}$$

$$\hat{z}_0^* = 1. \quad , \quad , \quad \hat{z}_0^* = 1.$$

$$, \quad \mu \quad \hat{s}^{*+} \quad \hat{s}^{*-} \quad \mu \quad .$$

Farrell (1957)
 Forsund Sarafoglou, 2002 Farrell
 Koopman (1951)
 Koopmanns. Farrell Farrell
 Malmquist (1953), Shephard (1953).
 Diewert (1982). Caves, Christensen
 Thompson Thrall (1993) Farrell
 Afriat School⁸ Charnes-Cooper School)
 Shephard School⁹. Farrell
 Farrell Aigner Chu (1968)
 Afriat (1974) Richmond (1974)
 (Corrected Ordinary Least Squares). Aigner, Lovell
 Schmidt (1977). Aigner Chu (1968)
 Farrell Aigner Chu (1968)
 Chu Cobb-Douglas
 Aigner

⁸
⁹

1962 CRS

μ . μ VRS. μ μμ

μμ μ μ μ μ CRS μ μμ

al. 1978, μ Boles (1967) Boles (1971) μ Charnes *et*

Fortran μμ . CRS μ Farrell 1957

μ μμ , μ

μ μ μ . μ μ

μ μ μ μ μ Grouping Method.

VRS,

μ ,

μ μ U,

μ μ VRS

μ μ μ μ μ

μ μ μ μ μ

3.1.1 μ Farrell

Farrell 1957 Farrell Fieldhouse 1962 μ

μ n μ μ m μ . μ

CRS μ μ

Farrell Fieldhouse (1962):

$$l_1 = \max \{ \lambda_1 + \dots + \lambda_{n+m} \}$$

μ

$$\sum_{j=1}^{n+m} P_j \lambda_j = P_k$$

$$\lambda_j \geq 0, \quad j = 1, \dots, n+m \quad (1)$$

$$P_j \in E^m (j = 1, \dots, n) \quad \mu \quad \mu$$

,

$$P_{n+i} = (0, \dots, \infty, \dots, 0), i = 1, \dots, m \quad (2)$$

μ μ μ i^{th}
 μ \cdot μ impose μ
 μ $\cdot P_k$ (1) P_k

μ μ μ μ μ μ μ
 μ μ (1). μ (1) μ μ
 DEA. μ μ :

$$l_2 = \min \theta$$

$$\sum_{j=1}^{n+m} P_j \lambda_j = \theta P_k$$

$$\sum_{j=1}^{n+m} \lambda_j = 1$$

$$\lambda_j \geq 0, \quad j = 1, \dots, n+m \quad (3)$$

μ (3) DEA, μ μ

DEA μ .
 μ 1
 μ
 $P_j, j = 1, \dots, n+m$. μ 1 3 μ , μ

$$\lambda_j = \frac{1}{\theta} \lambda'_j, j = 1, \dots, n+m, I_1 = \frac{1}{\theta}, I_2 = \theta \quad (4)$$

$\lambda_j, j = 1, \dots, n+m,$ $\lambda'_j, j = 1, \dots, n+m,$ θ
 μ (1) (3),

3.1.2

μ Farrell CCR DEA μ

μ 3 DEA μ , μ DEA μ .
 μ 3

μ μ Charnes *et al* (1978) (CCR) μ μ . CRS

μ μ Farrell Fieldhouse μ

$$x'_j = \begin{pmatrix} x_j \\ y_j \end{pmatrix} \quad x_j \in E^m, j = 1, \dots, n \quad y_j \cdot x_j$$

μ μ CCR. μ μ μ μ μ

μ Farrell:

$$I_3 = \max \sum_{j=1}^{n+m} \lambda'_j$$

μ

$$\sum_{j=1}^{n+m} x'_j \lambda'_j = x'_k$$

$$\lambda'_j \geq 0, \quad j = 1, \dots, n + m, \tag{5}$$

$$\mu \quad \mu \quad \mu \quad \lambda_j \quad \lambda'_j \quad \mu$$

$$\mu \quad x'_j \cdot \mu \quad \mu \quad \mu \quad 1, \quad \mu \quad \mu \quad 5 \quad \mu$$

$$\mu \quad \mu \quad :$$

$$l_4 = \min \theta$$

μ

$$\sum_{j=1}^{n+m} x'_j \lambda'_j = \theta x'_k$$

$$\sum_{j=1}^{n+m} \lambda'_j = 1$$

$$\lambda'_j \geq 0, \quad j = 1, \dots, n + m, \tag{6}$$

μ CCR μ μ .

$$l_5 = \min \theta$$

μ

$$\sum_{j=1}^n x'_j \lambda'_j \leq \theta X_k$$

μ 2
 μ 7 μ 8 μ μ λ_j λ'_j
 μ $I_5 = I_6$, μ θ μ λ_j λ'_j
 $j = 1, \dots, n$, μ 9.

μ μ μ μ 6 μ CCR μ 7 μ
 μ 8. μ (2) μ μ μ λ'_{n+1} ,
 $i = 1, \dots, m, s_0$ μ 6 slack μ μ μ
 8. 6 μ m . μ
 Farrell μ μ μ μ
 Pareto μ .

μ 8 , 8
 μ μ μ Pareto μ μ .
 μ 8 2 μ μ
 μ μ . μ μ 7 μ
 μ μ μ
 DEA. μ μ 6 8
 . μ , μ .
 Farrell 1957 :

$$\square P_{n+i} = (0, \dots, M, \dots, 0), \quad i = 1, \dots, m, \quad (10)$$

μ μ μ μ μ
 μ . μ μ “
 ” μ DEA.

3.1.3 μ Farrell μ .

Farrell 1957 μ 1

$$\max \sum_{j=1}^{n+m+r} \lambda_j$$

μ

$$\sum_{j=1}^{n+m+r} X_j \lambda_j = X_k$$

$$\begin{aligned}
P_j &= (X_j, y_j) \quad \mu & X_j &\in E^m (j=1, \dots, n) & y_j \\
P'_j &= (X'_j, y_j, y_k) = (X'_j, y_j), \quad j=1, \dots, n, & & & (12)
\end{aligned}$$

$\theta = O'P'_1 / O'P'_K$

(1). $\theta = O'P'_1 / O'P'_K$

coordinates.

$O'P'_K$

$P'_j = (X'_j, y_j - y_k), \quad j=1, \dots, n,$

(13)

Farrell Fieldhouse (1962)

corresponds

$\min \theta$

$$\begin{aligned}
\sum_{j=1}^n x'_j \lambda_j &= \theta X'_k \\
\sum_{j=1}^n y_j \lambda_j &= y_k \\
\sum_{j=1}^n \lambda_j &= 1 \quad \lambda_j \geq 0, \quad j=1, \dots, n, & (14)
\end{aligned}$$

¹⁰ Farrell Fieldhouse 1962, 3 .259

Farrell
 1¹¹.
 Fieldhouse,
 12.

3.1.6 – Generalizing to multiple outputs

O Farrell Fieldhouse

$$\min \theta$$

$$\sum_{j=1}^n x_j \lambda_j = \theta X_k$$

$$\sum_{j=1}^n y_j \lambda_j = y_k$$

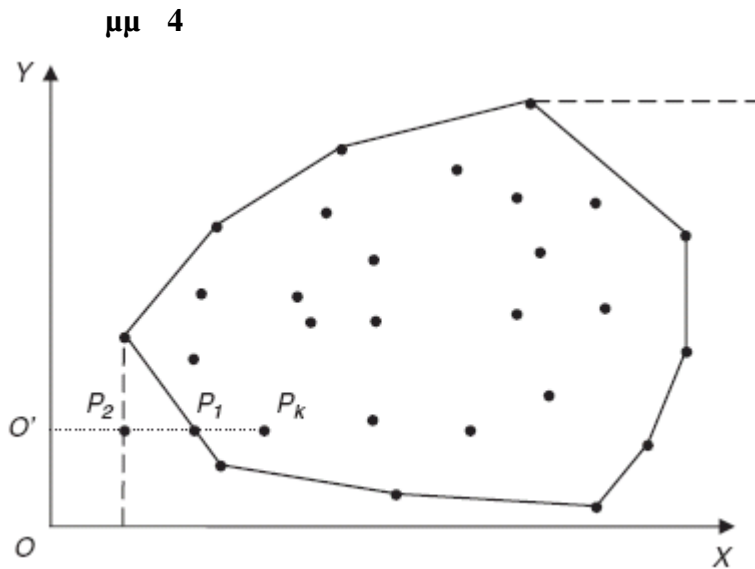
$$\sum_{j=1}^n \lambda_j = 1 \quad \lambda_j \geq 0, \quad j = 1, \dots, n, \quad (15)$$

14,15 Banker
 et al (1984) (BBC).
 BBC
 FDH¹³ (free disposal hull)
 .

¹¹ Farrell Fieldhouse,1962 .254-255

¹² Farrell Fieldhouse,1962 .260-261

¹³ . .



: (Forsund et al 2009, .1540)

μ μ 4 (Farrell – Fieldhouse BBC). μ
 μ Farrell – Fieldhouse $\theta_1 = O'P_1/O'P_k$ μ
 , μ μ .
 BBC μ $\theta_2 = O'P_2/O'P_k$ μ .
 μ μ μ μ μ μ ,
 μ μ μ μ BBC.
 μ μ 14 15 μ μ ,
 μ μ μ convex μ
 μ . Farrell Fieldhouse μ μ
 . Farrell 1957 μ μ μ
 μ , μ μ μ μ
 μ . μ VRS
 μ FDH.
 μ μ Seitz (1970,1971), μ
 μ Boles (1971).
 Seitz Boles μ μ
 Farrell Fieldhouse (1962).

2. (issues) μ 2009,
 μ μ μ μ ,
3. μ ISI (articles ISI) 2009,
4. μ ISI (total citation ISI) 2009,
 μ μ ,
5. μ ISI (5 year impact factor ISI),
 μ
(2009),
6. μ μ Scopus (documents Scopus),
1996-2009,
7. μ μ Scopus (Scopus citation)
1996-2009, μ μ ,
8. μ RePEc 2009,
9. μ Kiel, group
 μ μ μ ,
10. μ ABS, μ
 μ μ .

4.2.1 μ

(μ μ $\mu\mu$ Eviews, μ ,
2)
(4.1)

	ISI	SCOPUS	IMP FACTOR REPEC	5 YEAR IMP.FACT. ISI	ISI	ISSUES	SCOPUS	VOLUMES
μ	358.443	664.8202	3.624855	1.822395	2278.496	180.3465	10344.7	44.93421
μ	264.5	526.5	1.8455	1.4245	919	148	4642	38
μ	3202	3522	33.151	8.922	49204	919	93735	229
μ	41	49	0.0001	0.196	23	21	64	7
	344.7724	527.1873	5.395743	1.429865	4632.814	129.3926	14858.65	30.18913

μ (volumes)

, μ μ μ volumes μ
44,93421.

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n} = \frac{84 + 21 + 40 + \dots + 37 + 32 + 119}{228} = 44,93421$$

μ 38 μ μ μ
(228) :

$$\mu = \frac{38 + 38}{2} = 38$$

μ 114 115
International Journal of Game Theory Journal of Legal Studies.

μ μ μ μ μ μ , μ
 μ . μ μ μ
 μ (range), μ μ
 μ μ μ . μ μ ,
 μ μ μ , μ μ
 μ . μ μ , μ μ
 μ , (standard deviation). μ

μ μ μ μ μ .
 μ μ () μ μ
 μ . μ μ μ

$$\sigma = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n-1}} = \sqrt{\frac{(84 - 44,93421)^2 + (21 - 44,93421)^2 + (40 - 44,93421)^2 + \dots + (37 - 44,93421)^2 + (32 - 44,93421)^2 + (119 - 44,93421)^2}{228 - 1}}$$

30,18913

μ μ μ μ μ μ
30,18913 μ . μ μ ,
 μ μ μ ,
volumes

. 10 μ

Energy Economics 114 Journal of Consumer Research. 115

$$\sigma = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n-1}} =$$

$$\sqrt{\frac{(263-180.3465)^2 + (547-180.3465)^2 + (1083-180.3465)^2 + \dots + (445-180.3465)^2 + (615-180.3465)^2}{228-1}} = 129.3926$$

129.3926

Yale Law Journal 919, Michigan Law Review 847, Journal of Political Economy 736, Scandinavian Journal of Economics 603, Management Science 582, Economic Journal 541, American Economic Review 447, World Development 442, Applied Economics 441 Foreign Affairs 441.

10 issues : Economics and Human Biology 21, Econometrics Journal 29, International Finance 35, European Journal of Health Economics 38, European Review of Economic History 39, German 40, Journal of Economic Geography 41, Experimental Economics 41, Journal of the Europ. Econ. Ass 42 Review of Development Economics 46.

Scopus (Scopus Documents)

664,8202.

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n} = \frac{547 + 243 + 804 + \dots + 1901 + 988 + 615}{228} = 664,8202$$

$$\mu = \frac{526,5 + 523}{2} = 526,5$$

Oxford Bulletin of Economics and Statistics British Oxford Economic Papers – New Series.

$$\sigma = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n-1}} =$$

$$\sqrt{\frac{(263-358,443)^2 + (547-664,8202)^2 + (1083-664,8202)^2 + \dots + (445-664,8202)^2 + (615-664,8202)^2}{228-1}} = 527,1873$$

527,1873 : 10 : Foreign Affairs μ 3522, Economics Letters μ 3497, Applied Economics μ 2832, Applied Economics Letters μ 2732, International Journal of Production Economics μ 2628, American Economic Review μ 2410, Ecological Economics μ 2322, World Development μ 1901, Management Science μ 1816 Journal of Banking & Finance μ 1801.

10 : Geneva Risk and Insurance Review μ 49, European Review of Economic History μ 113, Econometrics Journal μ 116, Economics and Philosophy μ 129, Finance and Stochastics μ 166, Econometric Reviews μ 166, World Bank Research Observer μ 170, Experimental μ 177, European Journal of the History of Economic Thought μ 191, International Finance μ 196.

μ ISI (ARTICLES ISI)

μ 358.443.

μ μ :

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n} = \frac{342 + 139 + 451 + \dots + 937 + 529 + 273}{228} = 358.443$$

$$\mu = 264.5$$

$$\mu = \frac{266 + 263}{2} = 264.5$$

$$\mu = 114 \quad 115$$

Economica and Journal of Policy Analysis and Management.

$$\mu = \dots$$

$$\sigma = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n-1}} = \sqrt{\frac{(263 - 358.443)^2 + (785 - 358.443)^2 + (1083 - 358.443)^2 + \dots + (445 - 358.443)^2 + (320 - 358.443)^2}{228-1}} = 344.7724$$

$$344.7724$$

ISI 10

Development 3202, Economics Letters 2078, Applied Economics 1618, Ecological Economics 1596, Applied Economics Letters 1532, International Journal of Production Economics 1513, American Economic Review 1244, Journal of Banking & Finance 1224, Journal of Economic Behavior & Organization 963, Management Science 956.

10

ISI : Geneva Risk and Insurance Review 41, International Finance 42, European Review of Economic History 45, Journal of cultural Economics 46, Brooking Papers on Economic Activity 53, World Bank Research Observer 69, German Economic Review 74, Journal of International Trade and Economic Development 78, Journal of Economic Growth 85, Bulletin of Indonesian Economic Studies 87.

μ ISI (ISI total citations)

μ ISI μ 2278.496.
μ μ μ :

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n} = \frac{261+3141+3177+\dots+6081+4613+8122}{228} = 2278.496$$

μ 919 μ μ μ
(228) :

$$\mu = \frac{934+904}{2} = 919$$

μ 114 115
Journal of Applied Statistics Papers in Regional Science.

μ μ μ () μ
μ μ μ μ μ

$$\sigma = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n-1}} = \sqrt{\frac{(6420-2278.496)^2 + (785-2278.496)^2 + (6183-2278.496)^2 + \dots + (44035-2278.496)^2 + (3210-2278.496)^2}{228-1}} =$$

4632.814

μ μ μ μ μ
4632.814 μ .

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ISI

. 10 μ

: Development μ 49204, American Economic Review μ 26199, Econometrica μ 20643, Management Science μ 20103, Journal of Finance μ 18039, Journal of Political Economy μ 16350, Quarterly Journal of Economics μ 13985, Journal of Financial Economics μ 12058, Journal of Consumer Research μ 10771 Journal of Econometrics μ 8122.

10 μ μ

ISI : Geneva Risk and Insurance Review μ 23,

African Development Review μ 75, Eastern European Economics μ 91,

Geneva Papers on Risk and Insurance: Issues and Practice μ 95, Post-Communist Economies μ 104, European Journal of the History of Economic Thought μ 114, Journal of International Trade and Economic Development μ 116, Journal of Applied Econometrics μ 116, European Review of Economic History μ 125 Post-Soviet Affairs μ 126.

Repec (Factor Repec)

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n} = \frac{0.00010 + 0.00010 + 0.00010 + \dots + 0.00010 + 2.78900 + 2.28400}{228} =$$

3,624855

$$1.8455 = \frac{1.84500 + 1.84600}{2} = 1.8455$$

Social Choice and Welfare μ 114, Journal of Development Studies. μ 115

$$\sigma = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n-1}} =$$

$$\sqrt{\frac{(0.10 - 3,624855)^2 + (2.789 - 3,624855)^2 + (0.6854 - 3,624855)^2 + \dots + (1.256 - 3,624855)^2 + (1.965 - 3,624855)^2}{228-1}} =$$

5,395743

Repec. 10 μ :

Quarterly Journal of Economics μ 33.151, Journal of Economic Literature μ 31.249, Econometrica μ 28.299, Journal of Economic Growth μ 28.097, Brookings Papers on Economic Activity μ 20.841, Review of Economic Studies μ 18.628, Economic Policy μ 18.168, Journal of Economic Perspectives μ 17.696, Journal of Political Economy μ 17.379 Journal of Financial Economics μ 16.773.

10 μ μ
 : Yale Law Journal, Urban Studies, Telecommunications Policy, Review of International Studies, Review of Accounting Studies, Resource and Energy Economics, Post-Soviet Affairs, New Political Economy, Natural Resources Journal National Tax Journal μ μ 0.00010.

ISI (Five Year IMP Factor ISI)

μ μ μ 1.822395

:

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n} = \frac{1.938 + 0.477 + 0.673 + \dots + 1.225 + 1.159 + 4.109}{228} = 1.822395$$

μ 228

1,8455 :

$$\mu = \frac{1.425 + 1.424}{2} = 1,4245$$

μ 114 115

Journal of the Europ. Econ. Ass. Review of Economic Dynamics.

μ μ μ

μ μ :

$$\sigma = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n-1}} =$$

$$\sqrt{\frac{(3.560 - 1.822395)^2 + (2.789 - 1.822395)^2 + (0.6854 - 1.822395)^2 + \dots + (0.477 - 1.822395)^2 + (1.965 - 1.822395)^2}{228-1}}$$

=1,429865

μ SI

5 μ μ 1,429865 μ .

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 μ : 2 , Scopus ISI,
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 Scopus μ ISI, μ μ 3
 : Development μ 1052 Scopus 49204 ISI, Econometrics Journal
 μ 128 Scopus 493 ISI Economics and Philosophy μ 306 Scopus
 323 ISI. Scopus μ
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 Econometrics Journal ISI Scopus.
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 , μ μ μ μ μ μ
 . μ μ μ μ 228
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 : Applied Economics Letters, Applied Economics, Environment and Planning
 A, Management Science World Development. μ

(input oriented),
 Charnes *et al.*, (1978)
 (Constant Returns to Scale, CRS)

$$\min E_m = \sum_{i=1}^I u_{im} \cdot x_{im}$$

$$\sum_{j=1}^J v_{jm} \cdot y_{jn} = 1$$

$$\sum_{j=1}^J v_{jm} \cdot y_{jn} - \sum_{i=1}^I u_{im} \cdot x_{im} \leq 0$$

$n = 1, 2, \dots, N; v_{jm}, u_{im} \geq 0; i = 1, 2, \dots, I; j = 1, 2, \dots, J$

$$E_m = \sum_{i=1}^I u_{im} \cdot x_{im}$$

$$y_{im} = \sum_{j=1}^J v_{jm} \cdot y_{jn}$$

$$v_{jm} = \frac{y_{jn}}{\sum_{n=1}^N y_{jn}}$$

$$x_{im} = \sum_{i=1}^I \frac{x_{im}}{\sum_{i=1}^I x_{im}}$$

$$u_{im} = \frac{x_{im}}{\sum_{i=1}^I x_{im}}$$

$$y_{in} = \sum_{j=1}^J y_{jn}$$

$$x_{in} = \sum_{i=1}^I x_{im}$$

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 μ Kiel ABS. :

$$(x1) = \frac{\rho\theta\rho\alpha}{\tau \mu\omega(\text{ABS} + \text{Kiel})}, \mu$$

μ) (μ Kiel ABS).
 μ μ μ μ μ ,
 μ Scopus, ,

(5 year im.factor im.factor) μ ISI,
 μ RePEc .

:

(y1)

$$= \frac{\text{αναφορ } \zeta \text{ _Scopus}}{(\rho\theta\rho\alpha \text{ _Scopus} / \rho\theta\rho\alpha \text{ _περιοδικο}) * (\beta\alpha\rho \text{ τητα _ISI} + \beta\alpha\rho \text{ τητα _RePEc})}$$

(y2)

$$= \frac{\text{αναφορ } \zeta \text{ _ISI}}{(\rho\theta\rho\alpha \text{ _ISI} / \rho\theta\rho\alpha \text{ _περιοδικο}) * (\beta\alpha\rho \text{ τητα _ISI} + \beta\alpha\rho \text{ τητα _RePEc})}$$

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4.3.1

μ (μ μ μ μμ Eviews,
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(4.2)

	X1	Y1	Y2
μ	1.113728	39046.39	19615.94
μ	0.991296	4283.778	1486.183
μ	6.6875	2471320	1188832
μ	0.303571	20.52016	10.71038
	0.64849	181773	98403.43

μ X1

μ

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Applied Economics Letters μ 6.6875, Applied Economics μ 3.585366, Research Policy μ 3.355263, Michigan Law Review μ 2.638629, Yale Law Journal μ 2.57423, Telecommunications Policy μ 2.565657, World Development μ 2.389189, Eastern European Economics μ 2.382979, World Economy μ 2.389189, Journal of Peace Research μ 2.195652.

Journal of Economic Theory μ 0.303571, Games and Economic Behavior μ 0.307036, Journal of Econometrics μ 0.336134, Brookings Papers on Economic Activity μ 0.361702, Journal of Accounting Research μ 0.361702, Journal of Law & Economics μ 0.4, Journal of Financial Economics μ 0.416413, Jahrbücher für Nationalökonomie und Statistik μ 0.42067, Journal of Law, Economics & Organization μ 0.424, Review of Economic Studies μ 0.438312.

1. Scopus μ 39046,39

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n} =$$

$$\frac{23034.59 + 26.13979 + 997.9639 + \dots + 47926.62 + 5078.825 + 39653.8}{228} = 39046,39$$

$$\mu = \frac{4283,718 + 4283,718}{2} = 4283,718$$

Journal of the Japanese and International Economies 114
Energy Journal 115

$$\sigma = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n-1}} =$$

$$\sqrt{\frac{(2895.7 - 39046.3)^2 + (4365.5 - 39046.3)^2 + (3893.5 - 39046.3)^2 + \dots + (3478.9 - 39046.3)^2 + (3386.7 - 39046.3)^2}{228-1}} =$$

181773

Journal of Political Economy 2471320, Quarterly Journal of Economics 615977.2, Journal of Financial Economics 582953.2, Journal of Economic Literature 524008.6, Econometrica 518384.7, American Economic Review 307330.1, Journal of Finance 262475.6, Review of Economic Studies 230475.9, Economic Journal 219390.5, Journal of Econometrics 214641.9, European Journal of the History of Economic Thought 20.52016, African Development Review 26.13979, History of Political Economy 58.62539, Economics and Philosophy 101.8468, Post-Communist Economies 165.0546, Statistical Papers 174.8186, Geneva Papers on Risk and Insurance: Issues and Practice 184.6495, Geneva Risk and Insurance Review 191.8981, Applied Economics Letters 202.5192, New Political Economy 207.6865.

ISI . scopus ISI

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n} =$$

$$\frac{10870.18 + 10.71038 + 279.9677 + \dots + 11919.39 + 1775.168 + 43354.42}{228} = 19615,94$$

$$s^2 = \frac{1487.808 + 1484.559}{2} = 1486,183$$

Policy Sciences Journal of Economics and Management Strategy.

$$s = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n-1}} = \sqrt{\frac{(1480.0-19615,9)^2 + (1857.1-19615,9)^2 + (1187.2-19615,9)^2 + \dots + (1345.0-19615,9)^2 + (2036.2-19615,9)^2}{228-1}} = 98403,43.$$

98403,43.

Journal of Political Economy μ 1188832, Econometrica μ 727330.5, Quarterly Journal of Economics μ 377926.9, Journal of Economic Literature μ 250445.5, American Economic Review μ 194516, Journal of Finance μ 165417.3, Review of Economic Studies μ 135776.5, Journal of Financial Economics μ 120791.2, Economic Journal μ 90545.24, Review of Economics and Statistics μ 80901.26.

10 μ μ

2 : African Development Review μ 10.71038,
 European Journal of the History of Economic Thought μ 18.01346, Post-Communist
 Economies μ 45.41755, Geneva Papers on Risk and Insurance: Issues and Practice μ
 46.67931, Statistical Papers μ 62.59662, Applied Economics Letters μ 73.78918,
 History of Political Economy μ 77.96098, Geneva Risk and Insurance Review μ
 82.41966, Post-Soviet Affairs μ 83.28446 European Journal of Industrial Relations
 μ 93.91273.

4.4 μ DEA

$$\mu \quad \mu \quad \mu \quad (4.3)$$

(4.3):

1	Journal of Political Economy	1.000000	31	Journal of Risk and Uncertainty	0.018656
2	Econometrica	0.754091	32	Journal of Industrial Economics	0.017661
3	Quarterly Journal of Economics	0.497315	33	Journal of Urban Economics	0.017449
4	Journal of Financial Economics	0.445434	34	Review of Financial Studies	0.016536
5	Journal of Economic Literature	0.291783	35	Journal of Human Resources	0.015990
6	American Economic Review	0.213625	36	World Bank Economic Review	0.015739
7	Review of Economic Studies	0.204893	37	Games and Economic Behavior	0.015697
8	Journal of Econometrics	0.203178	38	Journal of Business & Economic Statistics	0.015508
9	Journal of Finance	0.184274	39	Journal of International Business Studies	0.015395
10	Brookings Papers on Economic Activity	0.130962	40	Oxford Economic Papers – New Series	0.015024
11	Economic Journal	0.107483	41	Economic Geography	0.013359
12	Journal of Monetary Economics	0.105577	42	Journal of Accounting Research	0.012831
13	Journal of Economic Theory	0.105092	43	Land Economics	0.012777
14	Review of Economics and Statistics	0.091139	44	Accounting Review	0.012601
15	Journal of International Economics	0.069145	45	Development	0.012168
16	Journal of Public Economics	0.053565	46	Industrial and Labor Relations Review	0.011289
17	Journal of Accounting and Economics	0.052018	47	Yale Law Journal	0.011140
18	Journal of Economic Perspectives	0.047540	48	Economica	0.010836
19	Journal of Environmental Econ. and Management	0.039415	49	Demography	0.010648
20	Rand Journal of Economics	0.029544	50	Journal of Health Economics	0.010519
21	Journal of Development Economics	0.029182	51	Scandinavian Journal of Economics	0.009660
22	Journal of Economic Growth	0.028669	52	Journal of Law, Economics & Organization	0.009429
23	European Economic Review	0.025357	53	Oxford Bulletin of Economics and Statistics	0.009372
24	Journal of Law & Economics	0.025152	54	Transportation Research: Part B: Methodological	0.008230
25	International Economic Review	0.022383	55	Journal of Financial and Quantitative Analysis	0.008094
26	Journal of Consumer Research	0.022368	56	Journal of Money Credit and Banking	0.007968
27	Journal of Labor Economics	0.022293	57	Economic Development and Cultural Change	0.007775
28	International Organization	0.021632	58	Journal of Economic Behavior & Organization	0.007543
29	Management Science	0.021226	59	Journal of Conflict Resolution	0.006924
30	Economic Policy	0.020790	60	Journal of International Money and Finance	0.006492

61	World Development	0.006383	94	Kyklos	0.002393
62	Public Choice	0.006338	95	Journal of Development Studies	0.002225
63	World Bank Research Observer	0.006092	96	International Journal of Game Theory	0.002187
64	Journal of Applied Econometrics	0.005842	97	Canadian Journal of Economics	0.002083
65	Population and Development Review	0.005824	98	Urban Studies	0.002076
66	Marketing Science	0.005795	99	International Journal of Forecasting	0.002072
67	Research Policy	0.005677	100	Industrial Relations	0.001942
68	Regional Science and Urban Economics	0.005336	101	Journal of Economic Geography	0.001901
69	Foreign Affairs	0.005153	102	Review of Income and Wealth	0.001876
70	International Journal of Production Economics	0.004707	103	Journal of Population Economics	0.001865
71	Journal of Economic Dynamics & Control	0.004654	104	Explorations in Economic History	0.001799
72	Journal of Banking & Finance	0.004617	105	Journal of Economic History	0.001789
73	Ecological Economics	0.004532	106	Southern Economic Journal	0.001769
74	Journal of Financial Intermediation	0.004079	107	Economic Theory	0.001748
75	Financial Management	0.003824	108	Journal of Regulatory Economics	0.001747
76	Economics Letters	0.003780	109	Energy Journal	0.001696
77	Journal of Regional Science	0.003678	110	Econometric Reviews	0.001685
78	International Journal of Industrial Organization	0.003570	111	Econometric Theory	0.001589
79	Papers in Regional Science	0.003291	112	Environmental & Resource Economics	0.001583
80	Regional Studies	0.003237	113	Cambridge Journal of Economics	0.001580
81	Journal of Comparative Economics	0.003219	114	Journal of Economics and Management Strategy	0.001557
82	Oxford Review of Economic Policy	0.003188	115	Labour Economics	0.001485
83	Michigan Law Review	0.003134	116	Journal of the Japanese and International Economies	0.001369
84	American Journal of Agricultural Economics	0.003094	117	Review of Economic Dynamics	0.001347
85	Journal of Legal Studies	0.002971	118	Economic History Review	0.001340
86	Environment and Planning A	0.002881	119	Journal of Productivity Analysis	0.001340
87	British Journal of Industrial Relations	0.002790	120	Health Economics	0.001215
88	Journal of Mathematical Economics	0.002723	121	Journal of Corporate Finance	0.001135
89	Journal of Economic Surveys	0.002643	122	Journal of Economic Psychology	0.001097
90	Journal of Agricultural Economics	0.002635	123	Review of World Economics	0.001084
91	Economic Inquiry	0.002440	124	Journal of Transport Economics and Policy	0.001075
92	Small Business Economics	0.002428	125	Economics of Education Review	0.001072
93	Mathematical Finance	0.002416	126	Real Estate Economics	0.001071

127	Journal of the Europ. Econ. Ass.	0.001067	160	Insurance: Mathematics and Economics	0.000610
128	Journal of Evolutionary Economics	0.001035	161	Journal of Environmental Planning and Management	0.000590
129	Journal of Financial Markets	0.001034	162	Australian Journal of Agricultural and Resource Economics	0.000587
130	Journal of Real Estate Finance and Economics	0.001023	163	International Tax and Public Finance	0.000531
131	Journal of Forecasting	0.001010	164	Econometrics Journal	0.000510
132	Scottish Journal of Political Economy	0.000989	165	Annals of Regional Science	0.000497
133	Development and Change	0.000981	166	Fiscal Studies	0.000489
134	IMF Staff Papers	0.000940	167	Applied Economics	0.000479
135	Manchester School	0.000937	168	International Review of Law and Economics	0.000456
136	Journal of Peace Research	0.000912	169	Bulletin of Indonesian Economic Studies	0.000443
137	European Review of Agricultural Economics	0.000907	170	Growth and Change	0.000433
138	International Regional Science Review	0.000893	171	China Economic Review	0.000417
139	Empirical Economics	0.000873	172	National Tax Journal	0.000401
140	Resource and Energy Economics	0.000869	173	Economics of Transition	0.000380
141	Journal of Cultural Economics	0.000864	174	Journal of Policy Modelling	0.000375
142	Economic Record	0.000854	175	Journal of Macroeconomics	0.000337
143	Energy Economics	0.000845	176	Feminist Economics	0.000333
144	Policy Sciences	0.000807	177	Environment and Planning C	0.000328
145	Food Policy	0.000796	178	Telecommunications Policy	0.000322
146	Theory and Decision	0.000785	179	International Journal of Finance and Economics	0.000320
147	Experimental Economics	0.000775	180	Journal of Housing Economics	0.000302
148	Social Choice and Welfare	0.000773	181	Macroeconomic Dynamics	0.000290
149	Journal of Economics (Zeitschrift für Nationalökonomie)	0.000763	182	Journal of African Economics	0.000289
150	World Economy	0.000722	183	Agricultural Economics	0.000289
151	Contemporary Accounting Research	0.000715	184	Review of International Studies	0.000277
152	Journal of Policy Analysis and Management	0.000703	185	Information Economics and Policy	0.000267
153	Review of Industrial Organization	0.000698	186	Population Research and Policy Review	0.000263
154	Review of Accounting Studies	0.000686	187	Environment and Development Economics	0.000248
155	International Finance	0.000676	188	Contemporary Economic Policy	0.000247
156	Finance and Stochastics	0.000672	189	Jahrbücher für Nationalökonomie und Statistik	0.000235
157	International Journal of Urban and Regional Research	0.000670	190	Canadian Journal of Agricultural Economics	0.000224
158	Mathematical Social Sciences	0.000667	191	Economic Modelling	0.000204
159	Journal of Risk and Insurance	0.000620	192	Mathematical Methods of Operations Research	0.000167

193	Resources Policy	0.000166	226	African Development Review	0.000011
194	Japanese Economic Review	0.000155	227	European Journal of the History of Economic Thought	0.000010
195	Economic and Industrial Democracy	0.000148	228	Applied Economics Letters	0.000010
196	Journal of Futures Markets	0.000147			
197	German Economic Review	0.000136			
198	Post-Soviet Affairs	0.000125			
199	European Journal of Industrial Relations	0.000119			
200	Economics and Philosophy	0.000118			
201	Journal of Applied Statistics	0.000117			
202	Journal of Post Keynesian Economics	0.000116			
203	Journal of Labor Research	0.000105			
204	Japan and the World Economy	0.000103			
205	European Review of Economic History	0.000098			
206	European Journal of Health Economics	0.000097			
207	Economics and Human Biology	0.000097			
208	Open Economies Review	0.000096			
209	Economic Development Quarterly	0.000092			
210	Journal of Economic Education	0.000091			
211	Journal of International Trade and Economic Development	0.000088			
212	Journal of Economic Issues	0.000081			
213	Developing Economies	0.000080			
214	Journal of Portfolio Management	0.000078			
215	Natural Resources Journal	0.000076			
216	Australian Economic Review	0.000073			
217	Review of Development Economics	0.000071			
218	Geneva Risk and Insurance Review	0.000066			
219	Statistical Papers	0.000060			
220	Defence and Peace Economics	0.000059			
221	New Political Economy	0.000058			
222	Geneva Papers on Risk and Insurance: Issues and Practice	0.000045			
223	History of Political Economy	0.000041			
224	Eastern European Economics	0.000035			
225	Post-Communist Economies	0.000026			

Journal of political Economy μ μ μ ,
 Econometrica μ 0.754091, Quarterly Journal of Economics μ 0.497315, Journal of
 Financial Economics μ 0.445434, Journal of Economic Literature μ 0.291783,
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1	Journal of Political Economy	<i>A</i>	31	Journal of Risk and Uncertainty	<i>B</i>
2	Econometrica	<i>A</i>	32	Journal of Industrial Economics	<i>B</i>
3	Quarterly Journal of Economics	<i>A</i>	33	Journal of Urban Economics	<i>B</i>
4	Journal of Financial Economics	<i>A</i>	34	Review of Financial Studies	<i>B</i>
5	Journal of Economic Literature	<i>A</i>	35	Journal of Human Resources	<i>B</i>
6	American Economic Review	<i>A</i>	36	World Bank Economic Review	<i>B</i>
7	Review of Economic Studies	<i>A</i>	37	Games and Economic Behavior	<i>B</i>
8	Journal of Econometrics	<i>A</i>	38	Journal of Business & Economic Statistics	<i>B</i>
9	Journal of Finance	<i>A</i>	39	Journal of International Business Studies	<i>B</i>
10	Brookings Papers on Economic Activity	<i>A</i>	40	Oxford Economic Papers – New Series	<i>B</i>
11	Economic Journal	<i>A</i>	41	Economic Geography	<i>B</i>
12	Journal of Monetary Economics	<i>A</i>	42	Journal of Accounting Research	<i>B</i>
13	Journal of Economic Theory	<i>A</i>	43	Land Economics	<i>B</i>
14	Review of Economics and Statistics	<i>A</i>	44	Accounting Review	<i>B</i>
15	Journal of International Economics	<i>A</i>	45	Development	<i>B</i>
16	Journal of Public Economics	<i>A</i>	46	Industrial and Labor Relations Review	<i>B</i>
17	Journal of Accounting and Economics	<i>A</i>	47	Yale Law Journal	<i>B</i>
18	Journal of Economic Perspectives	<i>A</i>	48	Economica	<i>B</i>
19	Journal of Environmental Econ. and Management	<i>A</i>	49	Demography	<i>B</i>
20	Rand Journal of Economics	<i>A</i>	50	Journal of Health Economics	<i>B</i>
21	Journal of Development Economics	<i>B</i>	51	Scandinavian Journal of Economics	<i>B</i>
22	Journal of Economic Growth	<i>B</i>	52	Journal of Law, Economics & Organization	<i>B</i>
23	European Economic Review	<i>B</i>	53	Oxford Bulletin of Economics and Statistics	<i>B</i>
24	Journal of Law & Economics	<i>B</i>	54	Transportation Research: Part B: Methodological	<i>B</i>
25	International Economic Review	<i>B</i>	55	Journal of Financial and Quantitative Analysis	<i>B</i>
26	Journal of Consumer Research	<i>B</i>	56	Journal of Money Credit and Banking	<i>B</i>
27	Journal of Labor Economics	<i>B</i>	57	Economic Development and Cultural Change	<i>B</i>
28	International Organization	<i>B</i>	58	Journal of Economic Behavior & Organization	<i>B</i>
29	Management Science	<i>B</i>	59	Journal of Conflict Resolution	<i>B</i>
30	Economic Policy	<i>B</i>	60	Journal of International Money and Finance	<i>B</i>

61	World Development	<i>C</i>	92	Small Business Economics	<i>C</i>
62	Public Choice	<i>C</i>	93	Mathematical Finance	<i>C</i>
63	World Bank Research Observer	<i>C</i>	94	Kyklos	<i>C</i>
64	Journal of Applied Econometrics	<i>C</i>	95	Journal of Development Studies	<i>C</i>
65	Population and Development Review	<i>C</i>	96	International Journal of Game Theory	<i>C</i>
66	Marketing Science	<i>C</i>	97	Canadian Journal of Economics	<i>C</i>
67	Research Policy	<i>C</i>	98	Urban Studies	<i>C</i>
68	Regional Science and Urban Economics	<i>C</i>	99	International Journal of Forecasting	<i>C</i>
69	Foreign Affairs	<i>C</i>	100	Industrial Relations	<i>C</i>
70	International Journal of Production Economics	<i>C</i>	101	Journal of Economic Geography	<i>C</i>
71	Journal of Economic Dynamics & Control	<i>C</i>	102	Review of Income and Wealth	<i>C</i>
72	Journal of Banking & Finance	<i>C</i>	103	Journal of Population Economics	<i>C</i>
73	Ecological Economics	<i>C</i>	104	Explorations in Economic History	<i>C</i>
74	Journal of Financial Intermediation	<i>C</i>	105	Journal of Economic History	<i>C</i>
75	Financial Management	<i>C</i>	106	Southern Economic Journal	<i>C</i>
76	Economics Letters	<i>C</i>	107	Economic Theory	<i>C</i>
77	Journal of Regional Science	<i>C</i>	108	Journal of Regulatory Economics	<i>C</i>
78	International Journal of Industrial Organization	<i>C</i>	109	Energy Journal	<i>C</i>
79	Papers in Regional Science	<i>C</i>	110	Econometric Reviews	<i>C</i>
80	Regional Studies	<i>C</i>	111	Econometric Theory	<i>C</i>
81	Journal of Comparative Economics	<i>C</i>	112	Environmental & Resource Economics	<i>C</i>
82	Oxford Review of Economic Policy	<i>C</i>	113	Cambridge Journal of Economics	<i>C</i>
83	Michigan Law Review	<i>C</i>	114	Journal of Economics and Management Strategy	<i>C</i>
84	American Journal of Agricultural Economics	<i>C</i>	115	Labour Economics	<i>C</i>
85	Journal of Legal Studies	<i>C</i>	116	Journal of the Japanese and International Economies	<i>C</i>
86	Environment and Planning A	<i>C</i>	117	Review of Economic Dynamics	<i>C</i>
87	British Journal of Industrial Relations	<i>C</i>	118	Economic History Review	<i>C</i>
88	Journal of Mathematical Economics	<i>C</i>	119	Journal of Productivity Analysis	<i>C</i>
89	Journal of Economic Surveys	<i>C</i>	120	Health Economics	<i>C</i>
90	Journal of Agricultural Economics	<i>C</i>			
91	Economic Inquiry	<i>C</i>			

121	Journal of Corporate Finance	<i>D</i>	152	Journal of Policy Analysis and Management	<i>D</i>
122	Journal of Economic Psychology	<i>D</i>	153	Review of Industrial Organization	<i>D</i>
123	Review of World Economics	<i>D</i>	154	Review of Accounting Studies	<i>D</i>
124	Journal of Transport Economics and Policy	<i>D</i>	155	International Finance	<i>D</i>
125	Economics of Education Review	<i>D</i>	156	Finance and Stochastics	<i>D</i>
126	Real Estate Economics	<i>D</i>	157	International Journal of Urban and Regional Research	<i>D</i>
127	Journal of the Europ. Econ. Ass.	<i>D</i>	158	Mathematical Social Sciences	<i>D</i>
128	Journal of Evolutionary Economics	<i>D</i>	159	Journal of Risk and Insurance	<i>D</i>
129	Journal of Financial Markets	<i>D</i>	160	Insurance: Mathematics and Economics	<i>D</i>
130	Journal of Real Estate Finance and Economics	<i>D</i>	161	Journal of Environmental Planning and Management	<i>D</i>
131	Journal of Forecasting	<i>D</i>	162	Australian Journal of Agricultural and Resource Economics	<i>D</i>
132	Scottish Journal of Political Economy	<i>D</i>	163	International Tax and Public Finance	<i>D</i>
133	Development and Change	<i>D</i>	164	Econometrics Journal	<i>D</i>
134	IMF Staff Papers	<i>D</i>	165	Annals of Regional Science	<i>D</i>
135	Manchester School	<i>D</i>	166	Fiscal Studies	<i>D</i>
136	Journal of Peace Research	<i>D</i>	167	Applied Economics	<i>D</i>
137	European Review of Agricultural Economics	<i>D</i>	168	International Review of Law and Economics	<i>D</i>
138	International Regional Science Review	<i>D</i>	169	Bulletin of Indonesian Economic Studies	<i>D</i>
139	Empirical Economics	<i>D</i>	170	Growth and Change	<i>D</i>
140	Resource and Energy Economics	<i>D</i>	171	China Economic Review	<i>D</i>
141	Journal of Cultural Economics	<i>D</i>	172	National Tax Journal	<i>D</i>
142	Economic Record	<i>D</i>	173	Economics of Transition	<i>D</i>
143	Energy Economics	<i>D</i>	174	Journal of Policy Modelling	<i>D</i>
144	Policy Sciences	<i>D</i>	175	Journal of Macroeconomics	<i>D</i>
145	Food Policy	<i>D</i>	176	Feminist Economics	<i>D</i>
146	Theory and Decision	<i>D</i>	177	Environment and Planning C	<i>D</i>
147	Experimental Economics	<i>D</i>	178	Telecommunications Policy	<i>D</i>
148	Social Choice and Welfare	<i>D</i>	179	International Journal of Finance and Economics	<i>D</i>
149	Journal of Economics (Zeitschrift für Nationalökonomie)	<i>D</i>	180	Journal of Housing Economics	<i>D</i>
150	World Economy	<i>D</i>	181	Macroeconomic Dynamics	<i>D</i>
151	Contemporary Accounting Research	<i>D</i>	182	Journal of African Economies	<i>D</i>

183	Agricultural Economics	<i>D</i>	214	Journal of Portfolio Management	<i>D</i>
184	Review of International Studies	<i>D</i>	215	Natural Resources Journal	<i>D</i>
185	Information Economics and Policy	<i>D</i>	216	Australian Economic Review	<i>D</i>
186	Population Research and Policy Review	<i>D</i>	217	Review of Development Economics	<i>D</i>
187	Environment and Development Economics	<i>D</i>	218	Geneva Risk and Insurance Review	<i>D</i>
188	Contemporary Economic Policy	<i>D</i>	219	Statistical Papers	<i>D</i>
189	Jahrbücher für Nationalökonomie und Statistik	<i>D</i>	220	Defence and Peace Economics	<i>D</i>
190	Canadian Journal of Agricultural Economics	<i>D</i>	221	New Political Economy	<i>D</i>
191	Economic Modelling	<i>D</i>	222	Geneva Papers on Risk and Insurance: Issues and Practice	<i>D</i>
192	Mathematical Methods of Operations Research	<i>D</i>	223	History of Political Economy	<i>D</i>
193	Resources Policy	<i>D</i>	224	Eastern European Economics	<i>D</i>
194	Japanese Economic Review	<i>D</i>	225	Post-Communist Economies	<i>D</i>
195	Economic and Industrial Democracy	<i>D</i>	226	African Development Review	<i>D</i>
196	Journal of Futures Markets	<i>D</i>	227	European Journal of the History of Economic Thought	<i>D</i>
197	German Economic Review	<i>D</i>	228	Applied Economics Letters	<i>D</i>
198	Post-Soviet Affairs	<i>D</i>			
199	European Journal of Industrial Relations	<i>D</i>			
200	Economics and Philosophy	<i>D</i>			
201	Journal of Applied Statistics	<i>D</i>			
202	Journal of Post Keynesian Economics	<i>D</i>			
203	Journal of Labor Research	<i>D</i>			
204	Japan and the World Economy	<i>D</i>			
205	European Review of Economic History	<i>D</i>			
206	European Journal of Health Economics	<i>D</i>			
207	Economics and Human Biology	<i>D</i>			
208	Open Economies Review	<i>D</i>			
209	Economic Development Quarterly	<i>D</i>			
210	Journal of Economic Education	<i>D</i>			
211	Journal of International Trade and Economic Development	<i>D</i>			
212	Journal of Economic Issues	<i>D</i>			
213	Developing Economies	<i>D</i>			

4.5

Nadaraya (1965), Watson (1964) – “Nadaraya – Watson”

(local constant estimator).

$$y_i = g(x_i) + \varepsilon_i, \quad x_i$$

($X_1 = \text{Kiel}$ $X_2 = \text{ABS}$)

($X_3 = \text{RePEc impact factor}$ $X_4 = \text{5 year impact factor}$).

$$g(x) = \int y g(y/x) dy = \int y \frac{f(y, x)}{f(x)} dy = \frac{m(x)}{f(x)},$$

$$g(y/x)$$

$$m(x) = \int y f(y, x) dy. \quad (\text{constant estimator of the}$$

conditional mean)

Kernel :

$$\hat{g}(x) = \int y \frac{\hat{f}(y, x)}{\hat{f}(x)} dy$$

$\hat{g}(x)$:

$$\hat{g}(x) = \int y \frac{\hat{f}(y, x)}{\hat{f}(x)} dy = \frac{\sum_{i=1}^n Y_i K\left(\frac{X_i - x}{h_x}\right)}{\sum_{i=1}^n K_i\left(\frac{X_i - x}{h_x}\right)}$$

(IMSE) :

$$h_{opt} = \left[\frac{\sigma^2(x) \int f^{-1}(x) dx \int K^2(z) dz}{\int \{2g'(x) f'(x) f^{-1}(x) + g''(x)\}^2} \right]^{1/5} n^{-1/5}$$

$$\int K^2(z) dz = \frac{1}{\sqrt{4\pi}}, \quad \int z^2 K(z) dz = 1 \quad h$$

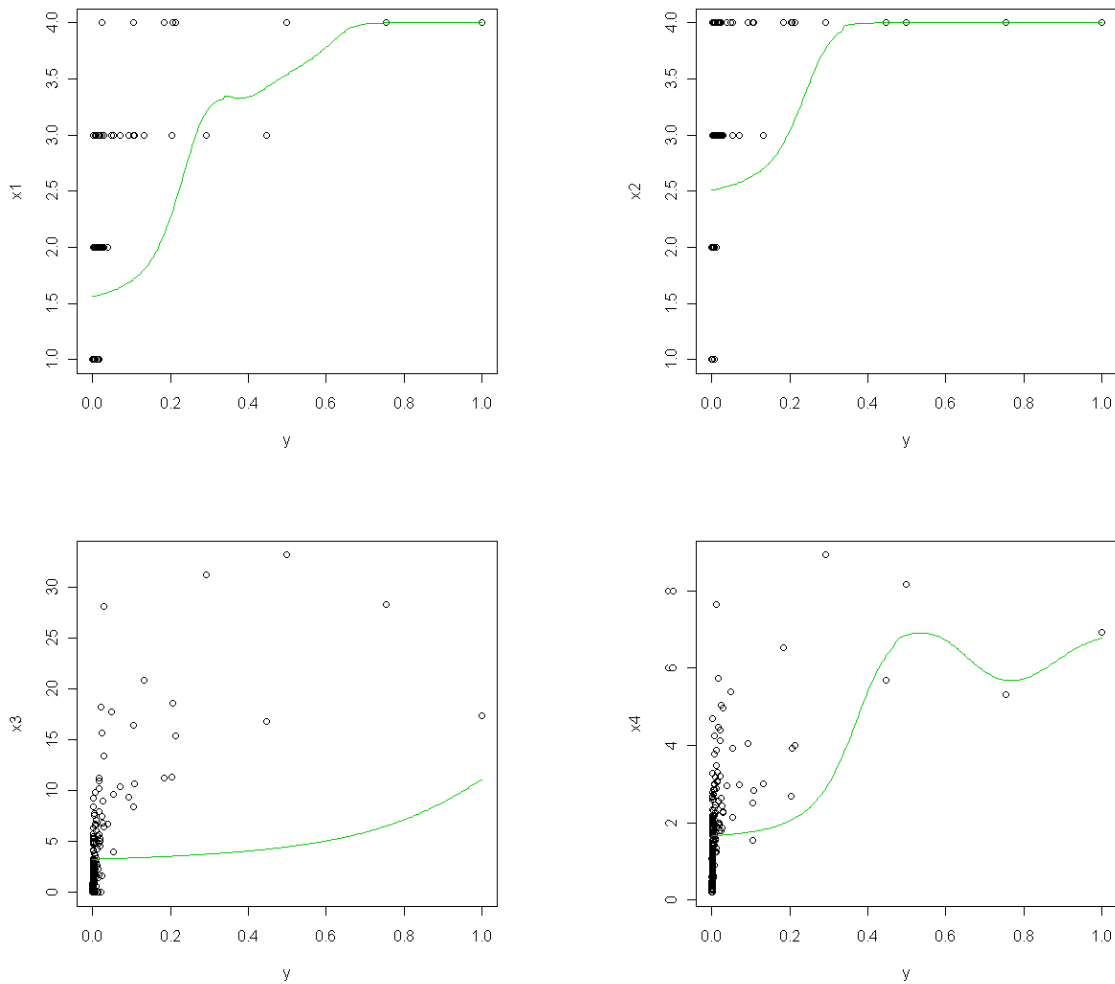
:

$$h_{opt} = (4\pi)^{-1/10} \left(\frac{3}{8}\right)^{-1/5} \pi^{1/10} \sigma n^{-1/5} = 1.059 \sigma n^{-1/5}$$

(Silverman, B.,1986 ; Li, Q. & Racine, J. 2007 ; Watson, G.1964 ; Nadaraya, A 1964)

Στο διάγραμμα (4.5) βλέπουμε την επίδραση που έχουν οι μεταβλητές της ποιότητας (Kiel και ABS) και οι μεταβλητές που έχουμε πάρει για βαρύτητα (RePEc impact factor και 5 year impact factor) στην αποδοτικότητα των περιοδικών (τα διαγράμματα έχουν παρουσιαστή με την χρήση του μαθηματικοποιημένου προγράμματος R 2.8.1)

Διάγραμμα (4.5)



Όπως βλέπουμε και από τα διαγράμματα η ποιότητα (X_1, X_2) επηρεάζει περισσότερο την αποδοτικότητα των περιοδικών από ότι η βαρύτητα (X_3, X_4). Το Kiel επηρεάζει θετικά, αλλά όχι πολύ κιάλας, αφού υπάρχουν και περιοδικά που έχουν βαθμολογίες με τέσσερα αλλά έχουν χαμηλή αποδοτικότητα. Η ABS όμως επηρεάζει περισσότερο την αποδοτικότητα αφού τα πιο πολλά περιοδικά που έχουν βαθμολογία τέσσερα έχουν και πιο υψηλή αποδοτικότητα. Αντίθετα οι μεταβλητές της βαρύτητας (RePEc impact factor και 5 year impact factor) δεν επηρεάζουν τόσο την αποδοτικότητα των περιοδικών, αφού τα περισσότερα περιοδικά που έχουν και υψηλή βαρύτητα δεν έχουν και υψηλή αποδοτικότητα.

4.6 Σύγκριση με την λίστα του Diamond

Ενδιαφέρον θα είχε να γίνει μία σύγκριση μεταξύ την ταξινόμηση των οικονομικών περιοδικών που κάναμε και της λίστας του Diamond (1989), ο οποίος έκανε μία λίστα με 27 οικονομικά περιοδικά τα οποία και ονόμασε ως «πυρήνα» των οικονομικών περιοδικών, η κατάταξη έγινε σύμφωνα με τις αναφορές και τα άρθρα που εκδίδει κάθε περιοδικό (πίνακας 4.6)

Πίνακας (4.6)

	A
Amer. Econ. Rev.	9.3
Brookings Pap. Econ. Activ.	7.1
Can. J. Econ.	6.7
Econometrica	8.9
Econ. Inq.	6.5
Econ. J.	8.9
Economica	>10.0
Econ. Lett.	4.2
Eur. Econ. Rev.	5.5
Int. Econ. Rev.	9.8
J. Develop. Econ.	5.0
J. Econometrics	6.3
J. Econ. Lit.	5.7
J. Econ. Theor.	9.5
J. Finan. Econ.	5.9
J. Int. Econ.	6.1
J. Labor Econ.	2.5
J. Law Econ.	9.3
J. Math. Econ.	9.0
J. Monetary Econ.	5.0
J. Polit. Econ.	>10.0
J. Public Econ.	7.6
Oxford Econ. Pap.—New Ser.	8.2
Quart. J. Econ.	>10.0
Rand J. Econ.	2.3
Rev. Econ. Statist.	9.4
Rev. Econ. Stud.	>10.0

(Πηγή: Diamond (1989), σελ 8)

($\mu \mu$) : Journal of Political Economy, Econometrica, Quarterly Journal of Economics, Journal of Financial Economics, Journal of Economic Literature, American Economic Review, Review of Economic Studies, Journal of Econometrics, Brookings Papers on Economic Activity, Economic Journal, Rand Journal of Economics, Journal of Economic Theory, Review of Economics and Statistics, Journal of International Economics, Journal of Public Economics Journal of Monetary Economics. μ 7 μ ($\mu \mu$): Journal of Development Economics, European Economic Review, Journal of Law & Economics, International Economic Review, Journal of Labor Economics, Oxford Economic Papers – New Series Economica. 4 μ ($\mu \mu$): Economics Letters, Journal of Mathematical Economics, Economic Inquiry Canadian Journal of Economics.

Diamond μ

μ , μ

μ , Diamond 1989
 μ μ .

μ ($X_3 = \text{RePEc impact factor}$ $X_4 = 5 \text{ year impact factor}$).

$\mu \mu$

$\mu\mu$

(X_1, X_2)

(X_3, X_4) .

μ

$\mu \mu$

Diamond

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- Bakkalbasi, N., Bauer, K., Glover, J. and Wang, L. (2006). Three options for citation tracking: Google Scholar, Scopus and Web of Science, *Biomedical digital libraries*, **3** (1), 7.
- Banker, R., Charnes, A. and Cooper, W. (1984). Some models for estimating technical and scale inefficiencies in data envelopment analysis, *Management science*, **30**, 1078-1092.
- Bar-Ilan, J. (2010). Citations to the introduction to informetrics indexed by WOS, Scopus and Google Scholar, *Scientometrics*, **82** (3), 495-506.
- Bauer, P., Berger, A. Ferrier, G. and Humphrey, D. (1998). Consistency conditions for regulatory analysis of financial institutions: a comparison of frontier efficiency methods, *Journal of Economics and Business*, **50** (2), 85-114.
- Bollen, J., Rodriquez, M. & Van de Sompel, H. (2006). Journal status, *Scientometrics*, **69** (3), 669-687.
- Burton, M. and Phimister, E. (1995). Core journals: A reappraisal of the Diamond list, *The Economic Journal*, **105** (429), 361-373.
- Caligiuri P. M., (1999). The ranking of scholarly journals in international human resource management, *The international journal of Human Resource Management*, **10** (3), 515-519.
- Charnes, A., Cooper, W. and Rhodes, E. (1978). Measuring the efficiency of decision making units, *European journal of operational research*, **2** (6), 429-444.
- Cook, W., Ravin, T. and Richardson, A. (2010). Aggregating Incomplete Lists of Journal Rankings: An Application to Academic Accounting Journals, *Accounting Perspectives*, **9** (3), 217-235.
- Cooper, W., Seiford, L. and Tone, K. (2006). *Introduction to data envelopment analysis and its uses: with DEA-solver software and references*, Springer Verlag.
- Diamond, A. M. (1989). The core journals in economics. *Current Contents*, **21**, 4-11.
- Etxebarria, G. and Gomez-Uranga, M. (2010). Use of Scopus and Google Scholar to measure social sciences production in four major Spanish universities, *Scientometrics*, **82** (2), 333-349.
- Farrel, M. (1957). The measurement of productive efficiency, *Journal of the Royal Statistical Society A*, **120** (3), 253-281.

- Forsund, F., Kittelsen, S. and Krivonozhko, V. (2009). Farrell revisited–Visualizing properties of DEA production frontiers, *Journal of the Operational Research Society*, **60** (11), 1535-1545.
- Forsund, F. and Sarafoglou, N. (2002). On the origins of data envelopment analysis, *Journal of Productivity Analysis*, **17** (1), 23-40.
- Franceschet, M. (2010). A comparison of bibliometric indicators for computer science scholars and journals on Web of Science and Google Scholar, *Scientometrics*, **83** (1), 243-258.
- Frey, B. and Rost, K. (2010). Do rankings reflect research quality?, *Journal of Applied Economics*, **13** (1), 1-38.
- Jennings, W.G., Higgins, G.E., and Khey, D.N. (2009). Exploring the stability and variability of impact factors and associated rankings in criminology and criminal justice journals, 1998-2007. *Journal of Criminal Justice Education*, **20** (2), 157-172
- Hagendijk, R. and Smeenk, J. (1989). The analysis of national subfields: a case study of Dutch fresh-water ecology, *Scientometrics*, **15** (5), 485-508.
- Halkos, G. and Tzeremes, N. (2007). Productivity efficiency and firm size: an empirical analysis of foreign owned companies, *International Business Review*, **16** (6), 713-731.
- Halkos G.E., and N.G. Tzeremes., (2008). Trade efficiency and economic development : evidence from a cross country comparison, *Applied Economics*, **40**, 2749-2764.
- Halkos G. and Tzeremes N. (2009a). Economic efficiency and growth in the EU enlargement. *Journal of Policy Modeling*, doi:10.1016/j.jpolmod.2009.08.003
- Halkos G. and Tzeremes N. (2009b). Measuring regional economic efficiency: the case of Greek prefectures, *The Annals of Regional Science*, doi:10.1007/s00168-009-0287-6
- Halkos G.E. and Tzeremes N.G. (2009c). Electricity generation and economic efficiency: Panel Data evidence from World and East Asian countries, *Global Economic Review*, **38** (3), 251-263.
- Harvey, C., Kelly, A., Morris, H. and Rowlinson, M. (2008). The Association of Business Schools, *Academic Journal Quality Guide*.
- Kalaitzidakis, P., Mamuneas, T. and Stengos, T. (2010). An Updated Ranking of Academic Journals in Economics, *Working Paper Series*.
- Katerattanakul, P., Han, B. and Hong, S. (2003). Objective quality ranking of computing journals, *Communications of the ACM*, **46** (10), 111-114.

Koczy, L. and Strobel, M. (2007). Ranking Academic Journals by Tournament Methods, Technical report, Mimeo.

Kodrzycki, Y. and Yu, P. (2006). New approaches to ranking economics journals, *Contributions to Economic Analysis & Policy*, **5** (1), 1-40.

Kovacs G., K.M.Spens., and D. B. Vellenga., (2008). Academic publishing in the Nordic countries- a survey of logistics and supply chain related journal rankings., *International Journal of Logistics: Research and Applications*, **11** (4), 313-329

Krauss, J. (2007). Journal self-citation rates in ecological sciences, *Scientometrics* **73** (1), 79-89.

Laband, D. and Piette, M. (1994). The relative impacts of economics journals: 1970-1990, *Journal of Economic Literature*, **32** (2), 640-666.

Lee, D. and Evans, A. (1984). American Geographer's ranking of American geography journals, *The Professional Geographer*, **36** (3), 292-300.

Leydesdorff, L., de Moya-Anegón, F. and Guerrero-Bote, V. (2010). Journal Maps on the Basis of Scopus Data: A comparison with the Journal Citation Reports of the ISI, *Journal of the American Society for Information Science and Technology*, **61** (2), 352-369.

Leydesdorff, L. and Rafols, I. (2009). A global map of science based on the ISI subject categories, *Journal of the American Society for Information Science and Technology*, **60** (2), 348-362.

Li, Q. and Racine, J. (2007). *Nonparametric econometrics: Theory and practice*, Princeton University Press Princeton, UK.

Liebowitz, S. and Palmer, J. (1984). Assessing the relative impacts of economics journals, *Journal of Economic Literature*, **22** (1), 77-88.

Liner, G. and Amin, M. (2004). Methods of ranking economics journals, *Atlantic Economic Journal*, **32** (2), 140-149.

Linton, J. and Thongpapanl, N. (2004). PERSPECTIVE: Ranking the Technology Innovation Management Journals, *Journal of Product Innovation Management*, **21** (2), 123-139.

Lovell, C. (1993). Production frontiers and productive efficiency, in A.I. Ali; L.M. Seiford; H. Fried; CAK Lovell & S. Schmidt, ed., 'The measurement of productive efficiency: Techniques and Applications', Oxford University Press, New York, pp. 3-67.

Meho, L. and Yang, K. (2007). Impact of data sources on citation counts and rankings of LIS faculty: Web of Science versus Scopus and Google Scholar, *Journal of the American Society for Information Science and Technology*, **58** (13), 2105-2125.

Moed, H. (2010). Measuring contextual citation impact of scientific journals, *Journal of Informetrics*, **4** (3), 265-277.

- Nadaraya, (1964). On estimating regression, *Theory Of probability applications*, **9** (1), 157-159.
- Nisonger, T. (1999). JASIS and library and information science journal rankings: A review and analysis of the last half-century, *Journal of the American Society for Information Science*, **50** (11), 1004-1019.
- Palacios-Huerta, I. and Volij, O. (2004). The measurement of intellectual influence, *Econometrica*, **72** (3), 963-977.
- Pujol, F. (2008). Ranking Journals Following a Matching Model Approach: An Application to Public Economics Journals, *Journal of Public Economic Theory*, **10** (1), 55-76.
- Rainer Jr, R. and Miller, M. (2005). Examining differences across journal rankings, *Communications of the ACM*, **48** (2), 91-94.
- Ramanathan, R. (2003). *An introduction to data envelopment analysis: a tool for performance measurement*, Sage Publications Pvt. Ltd.
- Ritzberger, K. (2008). A ranking of journals in economics and related fields, *German Economic Review*, **9** (4), 402-430.
- Schneider, F. and Ursprung, H. (2008). The 2008 GEA Journal-Ranking for the Economics Profession, *German Economic Review*, **9** (4), 532-538.
- Silverman, B. (1986). *Density estimation for statistics and data analysis*, Chapman & Hall, London.
- Simar, L. and Wilson, P. (2007). Estimation and inference in two-stage, semi-parametric models of production processes, *Journal of econometrics*, **136** (1), 31-64.
- Stringer, M., Sales-Pardo, M. and Amaral, L. (2008). Effectiveness of journal ranking schemes as a tool for locating information, *PLOS one*, **3** (2), 1683.
- Sumsion J., McMaugh A., and D. Saltmarsh., (2010). Ranking teacher education journals, *Asia-Pacific Journal of Teacher Education*, **36** (1), 1-3
- Theoharakis, V. and Hirst, A. (2002). Perceptual differences of marketing journals: A worldwide perspective, *Marketing Letters*, **13** (4), 389-402.
- Theussl, S. and Hornik, K. (2009). Journal Ratings and Their Consensus Ranking, *Operations Research Proceedings*, doi: 10.1007/978364200142065.
- Thomas, P. and Watkins, D. (1998). Institutional research rankings via bibliometric analysis and direct peer review: a comparative case study with policy implications, *Scientometrics*, **41** (3), 335-355.
- Vieira P. C. C., (2004). Statistical variability of top ranking economics journals impacts, *Applied Economics Letters*, **11** (15), 945-948

Watson, G. (1964). Smooth regression analysis, *Sankhy : The Indian Journal of Statistics, Series A*, **26** (4), 359-372.

Weingart, P. (2005). Impact of bibliometrics upon the science system: Inadvertent consequences?, *Scientometrics*, **62** (1), 117-131.

Wing C. K., (1997). The ranking of construction management journals, *Construction Management and Economics*, **15** (4), 387-398.

Worthington, A. (2004). Frontier efficiency measurement in health care: a review of empirical techniques and selected applications, *Medical Care Research and Review*, **61** (2), 135.

Yu, G., Guo, R. and Yu, D. (2006). The influence of the publication delay on journal rankings according to the impact factor, *Scientometrics*, **67** (2), 201-211.

Zehrer A., (2007). The justification of Journal Rankings- a pilot study, *Scandinavian Journal of Hospitality and Tourism*, **7** (2), 139-156

. (2000). : , μ $\mu\mu$
/ , ,

http://en.wikipedia.org/wiki/Bibliographic_database

<http://www.csa.com/factsheets/econlit-set-c.php>

<http://www.info.sciverse.com/scopus/about>

<http://repec.org/>

<http://www.ifw-kiel.de/academy/internal-journal-ranking>

<http://www.the-abs.org.uk/>

(1)

Accounting Review	Economics of Education Review
African Development Review	Economics of Transition
Agricultural Economics	Empirical Economics
American Economic Review	Energy Economics
American Journal of Agricultural Economics	Energy Journal
Annals of Regional Science	Environment and Development Economics
Applied Economics	Environment and Planning A
Applied Economics Letters	Environment and Planning C
Australian Economic Review	Environmental & Resource Economics
Australian Journal of Agricultural and Resource Economics	European Economic Review
British Journal of Industrial Relations	European Journal of Health Economics
Brookings Papers on Economic Activity	European Journal of Industrial Relations
Bulletin of Indonesian Economic Studies	European Journal of the History of Economic Thought
Cambridge Journal of Economics	European Review of Agricultural Economics
Canadian Journal of Agricultural Economics	European Review of Economic History
Canadian Journal of Economics	Experimental Economics
China Economic Review	Explorations in Economic History
Contemporary Accounting Research	Feminist Economics
Contemporary Economic Policy	Finance and Stochastics
Defence and Peace Economics	Financial Management
Demography	FinanzArchiv
Developing Economies	Fiscal Studies
Development	Food Policy
Development and Change	Foreign Affairs
Eastern European Economics	Games and Economic Behavior
Ecological Economics	Geneva Papers on Risk and Insurance: Issues and Practice
Econometric Reviews	Geneva Risk and Insurance Review
Econometric Theory	German Economic Review
Econometrica	Growth and Change
Econometrics Journal	Health Economics
Economic and Industrial Democracy	History of Political Economy
Economic Development and Cultural Change	IMF Staff Papers
Economic Development Quarterly	Industrial and Labor Relations Review
Economic Geography	Industrial Relations
Economic History Review	Information Economics and Policy
Economic Inquiry	Insurance: Mathematics and Economics
Economic Journal	International Economic Review
Economic Modelling	International Finance
Economic Policy	International Journal of Finance and Economics
Economic Record	International Journal of Forecasting
Economic Theory	International Journal of Game Theory
Economica	International Journal of Industrial Organization
Economics and Human Biology	International Journal of Production Economics
Economics and Philosophy	International Journal of Urban and Regional Research
Economics Letters	International Labour Review

International Organization	Journal of Institutional and Theoretical Economics
International Regional Science Review	Journal of International Business Studies
International Review of Law and Economics	Journal of International Economics
International Tax and Public Finance	Journal of International Money and Finance
Jahrbücher für Nationalökonomie und Statistik	Journal of International Trade and Economic Development
Japan and the World Economy	Journal of Labor Economics
Japanese Economic Review	Journal of Labor Research
Journal of Accounting and Economics	Journal of Law & Economics
Journal of Accounting Research	Journal of Law, Economics & Organization
Journal of African Economies	Journal of Legal Studies
Journal of Agricultural and Resource Economics	Journal of Macroeconomics
Journal of Agricultural Economics	Journal of Mathematical Economics
Journal of Applied Econometrics	Journal of Monetary Economics
Journal of Applied Statistics	Journal of Money Credit and Banking
Journal of Banking & Finance	Journal of Peace Research
Journal of Business & Economic Statistics	Journal of Policy Analysis and Management
Journal of Comparative Economics	Journal of Policy Modelling
Journal of Conflict Resolution	Journal of Political Economy
Journal of Consumer Research	Journal of Population Economics
Journal of Corporate Finance	Journal of Portfolio Management
Journal of Cultural Economics	Journal of Post Keynesian Economics
Journal of Development Economics	Journal of Productivity Analysis
Journal of Development Studies	Journal of Public Economics
Journal of Econometrics	Journal of Real Estate Finance and Economics
Journal of Economic Behavior & Organization	Journal of Regional Science
Journal of Economic Dynamics & Control	Journal of Regulatory Economics
Journal of Economic Education	Journal of Risk and Insurance
Journal of Economic Geography	Journal of Risk and Uncertainty
Journal of Economic Growth	Journal of the Europ. Econ. Ass.
Journal of Economic History	Journal of the Japanese and International Economies
Journal of Economic Issues	Journal of Transport Economics and Policy
Journal of Economic Literature	Journal of Urban Economics
Journal of Economic Perspectives	Kyklos
Journal of Economic Psychology	Labour Economics
Journal of Economic Surveys	Land Economics
Journal of Economic Theory	Macroeconomic Dynamics
Journal of Economics (Zeitschrift für Nationalökonomie)	Management Science
Journal of Economics and Management Strategy	Manchester School
Journal of Environmental Econ. and Management	Marketing Science
Journal of Environmental Planning and Management	Mathematical Finance
Journal of Evolutionary Economics	Mathematical Methods of Operations Research
Journal of Finance	Mathematical Social Sciences
Journal of Financial and Quantitative Analysis	Michigan Law Review
Journal of Financial Economics	Monthly Labor Review
Journal of Financial Intermediation	National Tax Journal
Journal of Financial Markets	Natural Resources Journal
Journal of Forecasting	New Political Economy
Journal of Futures Markets	Open Economies Review
Journal of Health Economics	Oxford Bulletin of Economics and Statistics
Journal of Housing Economics	Oxford Economic Papers – New Series
Journal of Human Resources	Oxford Review of Economic Policy
Journal of Industrial Economics	Papers in Regional Science

Policy Sciences	Review of Income and Wealth
Population and Development Review	Review of Industrial Organization
Population Research and Policy Review	Review of International Studies
Post-Communist Economies	Review of World Economics
Post-Soviet Affairs	Revue d'Economie Politique
Public Choice	Scandinavian Journal of Economics
Quarterly Journal of Economics	Scottish Journal of Political Economy
Rand Journal of Economics	Small Business Economics
Real Estate Economics	Social Choice and Welfare
Regional Science and Urban Economics	Southern Economic Journal
Regional Studies	Statistical Papers
Research Policy	Telecommunications Policy
Resource and Energy Economics	Theory and Decision
Resources Policy	Transportation Research: Part B: Methodological
Review of Accounting Studies	Urban Studies
Review of Development Economics	World Bank Economic Review
Review of Economic Dynamics	World Bank Research Observer
Review of Economic Studies	World Development
Review of Economics and Statistics	World Economy
Review of Financial Studies	Yale Law Journal

(2)

Date:01/06/11
Time: 03:45
Sample: 1 228

	ARTICLES ISI
Mean	358.4430
Median	264.5000
Maximum	3202.000
Minimum	41.00000
Std. Dev.	344.7724

Date:01/06/11
Time:03:48
Sample: 1 228

	DOCUMENTS SCOPUS
Mean	664.8202
Median	526.5000
Maximum	3522.000
Minimum	49.00000
Std. Dev.	527.1873

Date:01/06/11
Time:03:49
Sample: 1 228

	FACTOR REPEC
Mean	3.624855
Median	1.845500
Maximum	33.15100
Minimum	0.000100
Std. Dev.	5.395743

Date:01/06/11
Time:03:50
Sample: 1 228

	FIVE_YEAR IMPFACTOR_IS
Mean	1.822395
Median	1.424500
Maximum	8.922000
Minimum	0.196000
Std. Dev.	1.429865

Date:01/06/11
Time: 04:02
Sample: 1 228

	ISI_TC
Mean	2278.496
Median	919.0000
Maximum	49204.00
Minimum	23.00000
Std. Dev.	4632.814

Date:01/06/11
Time: 04:08
Sample: 1 228

	SCOPUS CITATIONS
Mean	10344.70
Median	4642.000
Maximum	93735.00
Minimum	64.00000
Std. Dev.	14858.65

Date:01/06/11
Time: 04:04
Sample: 1 228

	ISSUES
Mean	180.3465
Median	148.0000
Maximum	919.0000
Minimum	21.00000
Std. Dev.	129.3926

Date: 01/06/11
Time: 04:08
Sample: 1 228

	VOLUMES
Mean	44.93421
Median	38.00000
Maximum	229.0000
Minimum	7.000000
Std. Dev.	30.18913

Date:01/06/11
Time: 04:09
Sample: 1 228

	X1
Mean	1.113728
Median	0.991296
Maximum	6.687500
Minimum	0.303571
Std. Dev.	0.648490

Date:01/06/11
Time: 04:10
Sample: 1 228

	Y1
Mean	39046.39
Median	4283.778
Maximum	2471320.
Minimum	20.52016
Std. Dev.	181773.0

Date:01/06/11
Time: 04:11
Sample: 1 228

	Y2
Mean	19615.94
Median	1486.183
Maximum	1188832.
Minimum	10.71038
Std. Dev.	98403.43

Date: 01/06/11
Time: 03:47
Sample: 1 228

	CRSIN
Mean	0.023939
Median	0.001521
Maximum	1.000000
Minimum	9.64E-06
Std. Dev.	0.098831