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CCR μ μ μ μ

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Journal of political Economy Econometrica

Quarterly Journal of Economics. μ μ μ μ

μ “Nadaraya – Watson” μ .

## ABSTRACT

The evaluation of efficiency of the economic journals and the ranking of them, attracts the intense interest of researchers. In this research is used a non-parametric method, known as Data Envelopment Analysis (DEA) to assess the efficiencies. Specifically it is used an input oriented CCR model with constant returns of scale and then follows the ranking of the economic journals based on the efficiencies. According to the results, the more efficient journals are “Political Economy”, “Econometrica” and “Quarterly Journal of Economics”. Finally, we use the non-parametric regression “Nadaraya – Watson” in order to interpret the efficiencies.

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**JEL:** A10 ; C14 ; C67





μ «hybrid», μ μ .  
( Harvey *et al.*, 2010)

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Hawkins, Ritter Walter (1973) μ μ «Delphi», μ μ  
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(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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<sup>3</sup> : Complutense University in Madrid, University of Barcelona, Autonomous University of Barcelona, University of the Basque Country

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 μ «construction management journals».  
 Caligiuri (1999), μ .  
 Leydesdorff *et al.* (2010), μ Scopus  
 (1996-2007), μ μμ  
 μ SCI ISI (1998-2007) μ ,  
 ISI μ μ μ ,  
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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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 ISI, 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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Liebowitz and Palmer, (1984), Krauss (2007), Palacio-Huerta, I. and O. Volij, (2004), Palacio-Huerta, I. and O. Volij, (2008), Yu et al. (2006), Rosshi, (2001)

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<sup>4</sup> : Applied Stochastic Models in Business and Industry, Communications in Statistics, Theory and Methods, Computational Statistics and Data Analysis, Computational Statistics, Journal of Forecasting, Journal of Statistical Computation and Simulation, Journal of Statistical Planning and Inference, Journal of the American Statistical Association, Journal of Time Series Analysis, International Journal of Manpower, Population and Development Review, Regional Studies, Statistics and Stochastic Analysis and Applications.

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<sup>5</sup> Comitee for Research Monitoring

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 , IEA<sup>6</sup> Social Science Citation Index. , μ μ μ<sup>7</sup>.

1970-1990 Liebowitz Palmer (1984),

<sup>6</sup> : 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.

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







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 « μ »(principle of frontier analysis).  
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 (Halkos Tzeremes, 2009c). μ  
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 μ μ Panel Data.  
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 , 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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SFA  $\mu$   $\mu$   $\mu$   $\mu$   $\mu$

### 2.2.3 *(TFA Thick Frontier Approach)*

TFA  $\mu$   $\mu$   $\mu$   $\mu$  SFA,  
 $\mu$   $\mu$   $\mu$   $\mu$   
 $\mu$  (  $\mu$   $\mu$  )  
 ). TFA  $\mu$   $\mu$  ,  
 $\mu$   $\mu$   $\mu$   $\mu$   
 $\mu$   $\mu$   $\mu$  .  
 $\mu$   $\mu$   $\mu$   $\mu$   $\mu$  ,  
 $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   
 .  $\mu$  SFA,  
 TFA  $\mu$  ,  $\mu$  .

### 2.2.4 $\mu$ *(DFA Distribution Free Approach)*

DFA  $\mu$   $\mu$   $\mu$   $\mu$   $\mu$  ,  
 $\mu$   $\mu$   $\mu$   $\mu$  .  
 Berger (1993)  
 $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   
 $\mu$  SFA,  $\mu$   $\mu$   $\mu$   
 $\mu$   $\mu$   $\mu$   $\mu$   
 $\mu$  TFA. ,  $\mu$

,  $\mu$   $\mu$   $\mu$  .  
 DFA-P-WITHIN  $\mu$   $\mu$   $\mu$  .  
 $\mu$   $\mu$   $\mu$   $\mu$  .  
 $\mu$   $\mu$  .  
 $\mu$   $\mu$  ,  $\mu$   $\mu$   $\mu$  .  
 . DFA-P-GLS,  $\mu$   $\mu$  .  
 $\mu$  ,  $\mu$   $\mu$   $\mu$  ,  
 $\mu$   $\mu$  .  
 $\mu$   $\mu$  , DFA-P TRUNCATED  
 1%  $\mu$  ,  $\mu$   $\mu$  .  
 . DFA  $\mu$   $\mu$  .  
 $\mu$   $\mu$  . DFA  
 SFA TFA «intuitively appealing»  $\mu$   $\mu$  .  
 $\mu$   $\mu$   $\mu$   $\mu$  .  
 $\mu$   $\mu$   $\mu$   $\mu$  .  
 . (Bauer *et al.*, 1998).



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

$y_{rj}, x_{ij}$  ( )  $j$ -  
 $u_r, u_i$   $\mu$   $\mu$   
 $\mu$  .  $\mu$   $\mu$  ,  $\mu$   
 $\mu$  .  $\mu$   $\mu$   
 (  $\mu$  ),  
 $\mu$  "0".  $\mu$   $\mu$   
 $\mu$   $\mu$  .  
 $\mu$   $x_{ij}$   $y_{rj}$  ,  
 $\mu$   $\mu$   
 $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   
 $\mu$  ,  $\mu$   $\mu$  .  
 (1),  $E_r$   
 $x$   $\mu$  (1):

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

$\mu$  :

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

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

$$u, v \geq 0$$

$$r = 0$$

$$u^*, v^*$$

$$x_R = x_r = x,$$

$$u^* y_R = v^* x_B$$

$$E_r = y_r / y_B$$

$\mu$   $\mu$  .  $\mu$   $\mu$   $y_{E \geq y_r}$   
 $\mu$   $\mu$   $\mu$   $x_0 = x$ ,  
 $\mu$   $\mu$   $\mu$   $\mu$  «  $\mu$  »  
 $\mu$  .  $\mu$  ,



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

$\mu :$

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

$\mu :$

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

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

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

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

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

$\mu \quad \mu \quad :$

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

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

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

$t > 0 \quad \mu :$

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

$\mu :$

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

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

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

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

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

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

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

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

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

$j=1, \dots, n,$

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

$$\mu \quad (3) \quad \mu \quad \mu \quad :$$

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

$\mu$  :



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

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

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

$$z_0, s^{*+}, s^{*-}, j, \quad (11)$$

$$j=1, \dots, n,$$

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

$$\mu \quad s^{*-} \quad \mu \quad \mu -$$

$$\mu \quad \mu \quad \mu \quad \cdot \quad z_0 > 1$$

$$\mu \quad (6) - (8)$$

$$\mu \quad : \quad s^{*+},$$

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

$$s^{*-}, \quad \mu \quad X_0$$

$$X_0 - s^{*-}, \quad \mu \quad \mu \quad z_0^* = 1. \quad \mu \quad (1) \quad (2)$$

$$\mu \quad \mu$$

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

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

$$:$$

- i.  $z_0^* = 1$
- ii.  $\mu \quad \mu \quad (12)$



(13).  $\mu :$

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

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

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

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

$\hat{z}_j^* \cdot \mu :$

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

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

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

(13).

$$\mu \quad \hat{z}_j^*, j=1, \dots, n, \quad \mu \quad (10)$$

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

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

(11):

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

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

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

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

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

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

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

$\mu$ ,  $\mu$   
 $\mu$   $z_0^*$   $\hat{s}^-$   
 $\mu$   $Y_0$   $X_0$ ,  $\mu$   $\mu$   
 $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   
 $\mu$   $\mu$   $\mu$   $\mu$   
 $\mu$   $\mu$   $\mu$   
 $\mu$   $\mu$   $\mu$   
 $\mu$   $\mu$   $\mu$   $\mu$   
 $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   
 $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   
 $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   
 $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   $\mu$

Forsund Sarafoglou, (2002)  
 CCR (Charnes, Cooper Rhodes)  $\mu$   $\mu$   
 $\mu$   $\mu\mu$   $\mu\mu$   $\mu$   $\mu$   $\mu\mu$   $\mu$   
 $\mu$  DEA CCR. CCR  
 Farrell “Measuring the efficiency of decision making units”  
 $\mu$  Farrell  $\mu$   $\mu$   $\mu$  CCR.  
 Russell (1998) : « *Farrell*  
*CCR* 1978  $\mu$   
 $\mu$   $\mu$   $\mu\mu$   $\mu$   $\mu$   
 $\mu$   $\mu$   $\mu$   $\mu$  *DEA*  $\mu$  ».  
 Farrell CCR  
 1970, 1980 1990.  $\mu$   
 Farrell.  $\mu$   $\mu$   
 $\mu$

Solow 1957  $\mu$

$\mu$ ,  $\mu$  Farrell

$\mu$ ,  $\mu$

(benchmark)  $\mu$

Farrell  $\mu$ :

- $\bullet$   $\mu$ ,  $\mu\mu$
- $\bullet$   $\mu$   $\mu$
- $\bullet$   $\mu\mu$   $\mu$   $\mu$   $\mu\mu$

I.

II.  $\mu$   $\mu$

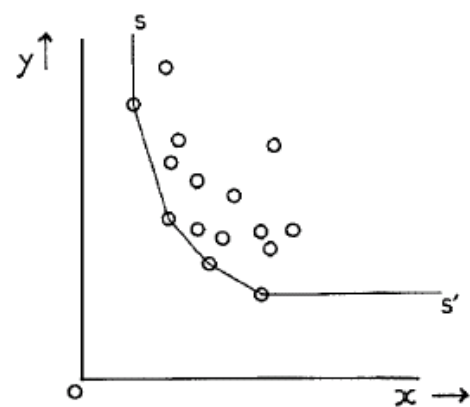
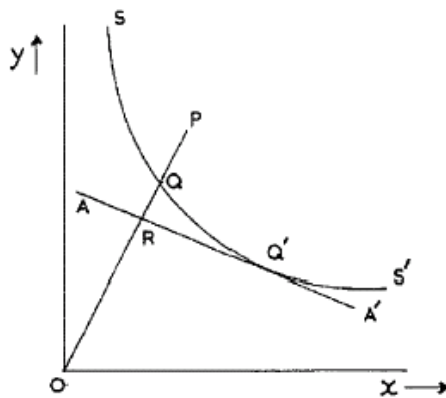
Farrell  $\mu$ ,  $\mu$ ,  $\mu$

$\mu$   $\mu$   $\mu\mu$

$\mu$   $\mu$  hallmark

$\mu\mu$  1:  $\mu$

$\mu\mu$  2:  $\mu\mu$



: Forsund Sarafoglou (2002), . 25-26



Farrell (1957)  
 Forsund Sarafoglou, 2002 Farrell  
 Koopman (1951)  
 Koopmanns. Farrell Farrell  
 Malmquist (1953), Shephard (1953).  
 Diewert (1982). Caves, Christensen  
 Thompson Thral (1993) Farrell  
 Afriat School<sup>8</sup> Charnes-Cooper School )  
 Shephard School<sup>9</sup>. Farrell  
 Farrell Aigner Chu (1968)  
 Afriat (1974) Richmond (1974)  
 (Corrected Ordinary Least Squares). Aigner, Lovell  
 Schmidt (1977). Aigner Chu (1968)  
 Farrell Aigner  
 Chu Cobb-Douglas  
 Aigner

<sup>8</sup>  
<sup>9</sup>

Afriat 1972 Farrell μ impact factor,  
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 Hanoach Rothschild. μ  
 Aigner, Lovell Schmidt (1977) (ALS) μ  
 ALS, μ  
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 Farrell Fieldhouse (1962). Hoffman  
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 CCR 1978 μ Farrell. μ  
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 ordinary linear programming method. μ μ  
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Forsund *et al* (2009) Farrell Fieldhouse (1962)  
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1957 μμ  
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1957 ,

1962 CRS

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μμ μ μ μ μ CRS μ μμ Charnes *et*

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

Fortran μμ . CRS μ Farrell 1957

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μ μ μ μ μ Grouping Method.

VRS,

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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

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

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

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

,

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

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

$\mu$   $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   
 $\mu$   $\mu$  (1).  $\mu$  (1)  $\mu$   $\mu$   
 DEA.  $\mu$   $\mu$  :

$$l_2 = \min \theta$$

$$\begin{aligned}
 & \sum_{j=1}^{n+m} P_j \lambda_j = \theta P_k \\
 & \sum_{j=1}^{n+m} \lambda_j = 1 \\
 & \lambda_j \geq 0, \quad j = 1, \dots, n+m \quad (3)
 \end{aligned}$$

$\mu$  (3) DEA,  $\mu$   $\mu$

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

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

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

3.1.2

$\mu$  Farrell CCR DEA  $\mu$

$\mu$  3 DEA  $\mu$ ,  $\mu$  DEA  $\mu$ .  
 $\mu$  3

$\mu$   $\mu$  Charnes *et al* (1978) (CCR)  $\mu$   $\mu$ . CRS

$\mu$   $\mu$  Farrell Fieldhouse  $\mu$

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

$\mu$   $\mu$  CCR.  $\mu$   $\mu$   $\mu$   $\mu$   $\mu$

$\mu$  Farrell:

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

$\mu$

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

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

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

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

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

$$l_4 = \min \theta$$

$\mu$

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

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

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

$\mu$  CCR  $\mu$   $\mu$ .

$$l_5 = \min \theta$$

$\mu$

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



$\mu_2$   
 $\mu_7$        $\mu_8$        $\mu$   
 $\mu$        $I_5 = I_6$ ,       $\mu$        $\theta$        $\mu$        $\lambda_j$        $\lambda'_j$   
 $j = 1, \dots, n$ ,       $\mu_9$ .

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

$\mu$        $\mu$        $\mu$        $\mu$        $8$       ,       $8$   
 $\mu$        $\mu$        $\mu$       Pareto       $\mu$        $\mu$       .  
 $\mu$        $8$        $2$        $\mu$        $\mu$   
 $\mu$        $\mu$       .       $\mu$        $\mu$        $7$        $\mu$   
 $\mu$        $\mu$        $\mu$        $\mu$   
 DEA.       $\mu$        $\mu$        $6$        $8$   
 .       $\mu$       ,       $\mu$       .  
 Farrell 1957 :

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

$\mu$        $\mu$        $\mu$        $\mu$        $\mu$   
 $\mu$       .       $\mu$        $\mu$       “  
 ”       $\mu$       DEA.

### 3.1.3 $\mu$ Farrell $\mu$ .

Farrell 1957  $\mu$  1

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

$\mu$

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

$$\sum_{j=1}^{n+m+r} Y_j \lambda_j = \left( \sum_{j=1}^{n+m+r} \lambda_j \right) Y_k$$

$$\lambda'_j \geq 0, j = 1, \dots, n+m+r \quad (11)$$

$$X_j \in E^m (j=1, \dots, n) \quad Y_j \in E^r, j=1, \dots, n$$

$$(y_j, x_j), \quad i = n+1, \dots, n+m+r$$

$$P_1 = (X_1, Y_1) = (4, 1), \quad P_2 = (X_2, Y_2) = (3, 3)$$

$$\max \{ \lambda_1 + \lambda_2 + \lambda_3 + \lambda_4 \}$$

$$4\lambda_1 + 3\lambda_2 + M\lambda_3 = 4$$

$$\lambda_1 + 3\lambda_2 + M\lambda_4 = (\lambda_1 + \lambda_2 + \lambda_3 + \lambda_4)$$

$$\lambda_j \geq 0, \quad j = 1, \dots, 4$$

$$P_3 = (M, 0) \quad P_4 = (0, M)$$

$$(X_1, Y_1) \quad (K=1).$$

$$\lambda_1 = 1, \lambda_2, \lambda_3, \lambda_4 = 0.$$

$$\theta = 1 / \sum_{j=1}^4 \lambda_j = 1.$$

$$P_2$$

### 3.1.4 « » μ VRS – The treatment of VRS

Farrell (1957) CRS

μ μ μ μ . μ μ

μ μ μ μ , μ

Farrell Fieldhouse 1962. μ μ μ

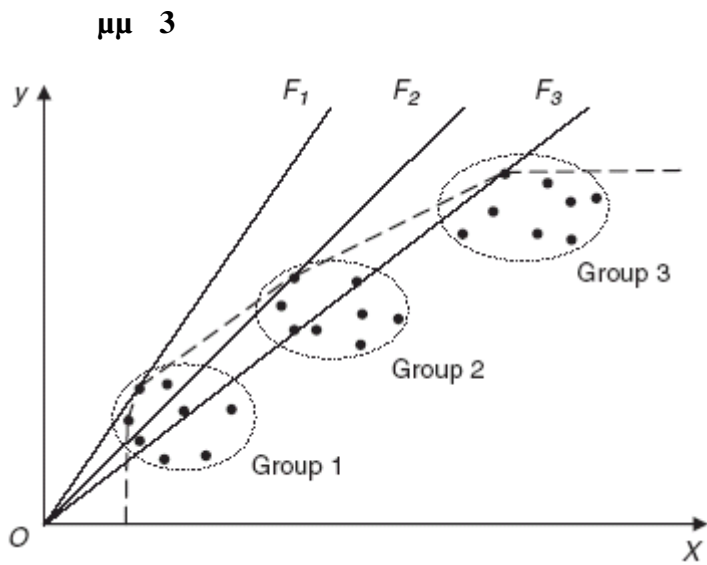
CRS μ , μ μ μ . μ μ

μ μ 1952-1953 μ μ

: , μ , . Farrell

Fieldhouse 1962 10 μ μ μ

Fieldhouse 1962  
 Farrell  
 5  
 Farrell  
 10 CCR  
 7.  
 digits



: (Forsund et al 2009, .1539)

Farrell Fieldhouse VRS  
 10 CRS  
 (3),  
 CRS  
 μ

3.1.5 – The overall method

Farrell Fieldhouse  
 μ μ  
 μ μ



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

$$P'_j = (X'_j, y_j, y_j) = (X'_j, y_j), \quad j=1, \dots, n, \quad (12)$$

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

$$P''_j = (X'_j, y_j - y_k), \quad j=1, \dots, n, \quad (13)$$

Farrell Fieldhouse (1962) corresponds

$\min \theta$

$$\sum_{j=1}^n x'_j \lambda_j = \theta X'_k$$

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

$$\sum_{j=1}^n \lambda_j = 1 \quad \lambda_j \geq 0, \quad j=1, \dots, n, \quad (14)$$

<sup>10</sup> Farrell Fieldhouse 1962, 3 .259

Farrell  
 1<sup>11</sup>.  
 Fieldhouse,  
 12.

### 3.1.6 – Generalizing to multiple outputs

O Farrell      Fieldhouse

$$\min \theta$$

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

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

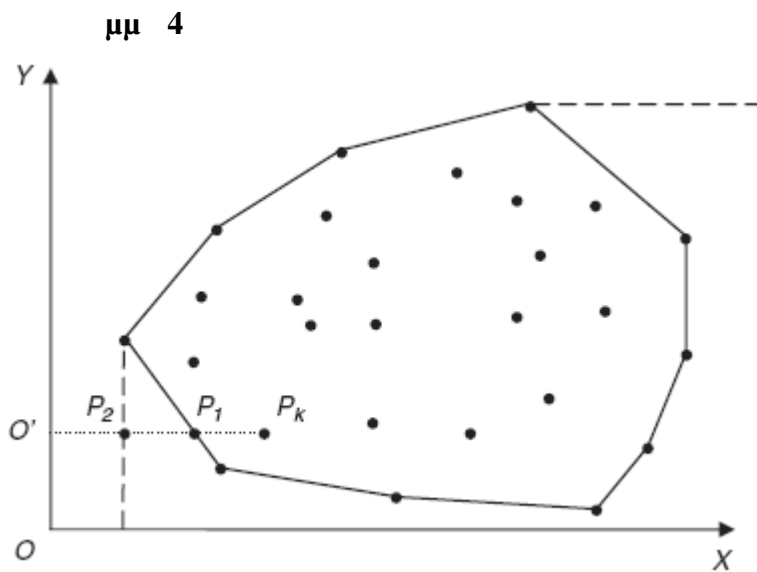
$$\sum_{j=1}^n \lambda_j = 1 \quad \lambda_j \geq 0, \quad j = 1, \dots, n, \quad (15)$$

14,15      Banker  
 et al (1984) (BBC).  
 BBC  
 FDH<sup>13</sup> (free disposal hull)  
 .

<sup>11</sup> Farrell      Fieldhouse,1962      .254-255

<sup>12</sup> Farrell      Fieldhouse,1962      .260-261

<sup>13</sup>      .      μ



: (Forsund et al 2009, .1540)

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





$\mu$  (volumes)

,  $\mu$   $\mu$   $\mu$  volumes  $\mu$   
 44,93421.

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

$\mu$  38  $\mu$   $\mu$   $\mu$   
 (228)

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

$\mu$  114 115  
 International Journal of Game Theory Journal of Legal Studies.

$\mu$   $\mu$   $\mu$   $\mu$   $\mu$   $\mu$  ,  $\mu$   
 $\mu$  .  $\mu$   $\mu$   $\mu$   
 $\mu$  (range),  $\mu$   $\mu$   
 $\mu$   $\mu$   $\mu$  .  $\mu$   $\mu$  ,  
 $\mu$   $\mu$   $\mu$  ,  $\mu$   $\mu$   
 $\mu$  .  $\mu$   $\mu$  ,  $\mu$   $\mu$   
 $\mu$  , (standard deviation).  $\mu$

$\mu$   $\mu$   $\mu$   $\mu$  .  
 $\mu$   $\mu$  ( )  $\mu$   $\mu$   
 $\mu$  .  $\mu$   $\mu$   $\mu$

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

30,18913

$\mu$   $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   
 30,18913  $\mu$  .  $\mu$   $\mu$  ,  
 volumes

. 10  $\mu$



14858,65

Journal of Financial Economics 93735, Journal of Political Economy 89944, Management Science 88995, American Economic Review 80192, Journal of Econometrics 63754, Journal of Finance 56519, Journal of Economic Theory 47413, Quarterly Journal of Economics 45509, World Development 44035, Journal of Monetary Economics 41554.

Geneva Risk and Insurance Review 64, Econometrics Journal 128, European Journal of the History of Economic Thought 159, Economics and Philosophy 306, European Review of Economic History 307, African Development Review 320, Eastern European Economics 438, Jahrbücher für Nationalökonomie und Statistik 494, Review of World Economics 559, German Economic Review 605.

**(Issues)**

H (issues) 180.3465.

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n} = \frac{342 + 49 + 132 + \dots + 442 + 215 + 919}{228} = 180.3465$$

μ (228) :

$$\mu = \frac{148 + 148}{2} = 148$$



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.

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

$$\mu = \frac{526,5 + 523}{2} = 526,5 \quad (228)$$

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.

$$\mu = \dots$$

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

$$344.7724$$

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 . μ μ μ ,

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  $\mu$  95, Post-Communist Economies  $\mu$  104, European Journal of the History of Economic Thought  $\mu$  114, Journal of International Trade and Economic Development  $\mu$  116, Journal of Applied Econometrics  $\mu$  116, European Review of Economic History  $\mu$  125 Post-Soviet Affairs  $\mu$  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  $\mu$  114, Journal of Development Studies.  $\mu$  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  $\mu$  :

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 .



μ .  
 , μ  
 μ μ μ .  
 μ μ μ μ  
 μ : 2 , Scopus ISI,  
 Scopus μ  
 ISI. μ  
 Scopus μ 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  
 .( )  
 ISI μ Scopus, μ  
 μ μ ISI  
 , μ μ  
 . μ μ μ μ  
 μ μ .  
 μ μ μ μ  
 , : documents Scopus, articles ISI. μ  
 μ μ μ μ  
 μ μ Scopus  
 μ μ μ μ  
 μ μ μ μ  
 . Development  
 Econometrics Journal ISI Scopus.  
 μ μ μ μ  
 . μ μ μ μ μ μ  
 , μ μ μ μ μ μ  
 . μ μ μ μ 228  
 4.16179, μ  
 μ μ μ μ μ μ  
 : 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)

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

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

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

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

$E_m$  m-  
 $y_{im}$  j- m-  
 $v_{jm}$   $\mu$ ,  
 $x_{im}$  i- m-  
 $u_{im}$   $\mu$ ,  
 $y_{in}$  j- n-  
 $x_{in}$  i- n-.

$\mu$   $\mu$   $\mu$   $\mu$   $\mu$  ( $\mu$ )  $\mu$   $\mu$   
 $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   $\mu$   
 $\mu$   $\mu$   $\mu$   $\mu$   
 $\mu$  Kiel ABS. :

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

$\mu$ ) ( $\mu$  Kiel ABS).  
 $\mu$   $\mu$   $\mu$   $\mu$   $\mu$ ,  
 $\mu$  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)

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

μ

μ

μ

### 4.3.1

μ ( μ μ μ μμ Eviews,  
 μ , 2 )

(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

μ

μ

μ

,

μ

μ



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

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

1. Scopus  $\mu$  39046,39

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

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

$$\mu = \frac{4283,718 + (228 \mu)}{2} = \frac{4303.924 + 4263.632}{2} = 4283,718$$

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

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

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

Journal of political Economy  $\mu$   $\mu$   $\mu$ ,  
 Econometrica  $\mu$  0.754091, Quarterly Journal of Economics  $\mu$  0.497315, Journal of  
 Financial Economics  $\mu$  0.445434, Journal of Economic Literature  $\mu$  0.291783,  
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 40 , 60 108)  $\mu$   
 .

( 4.4 ):

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

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) :

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

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

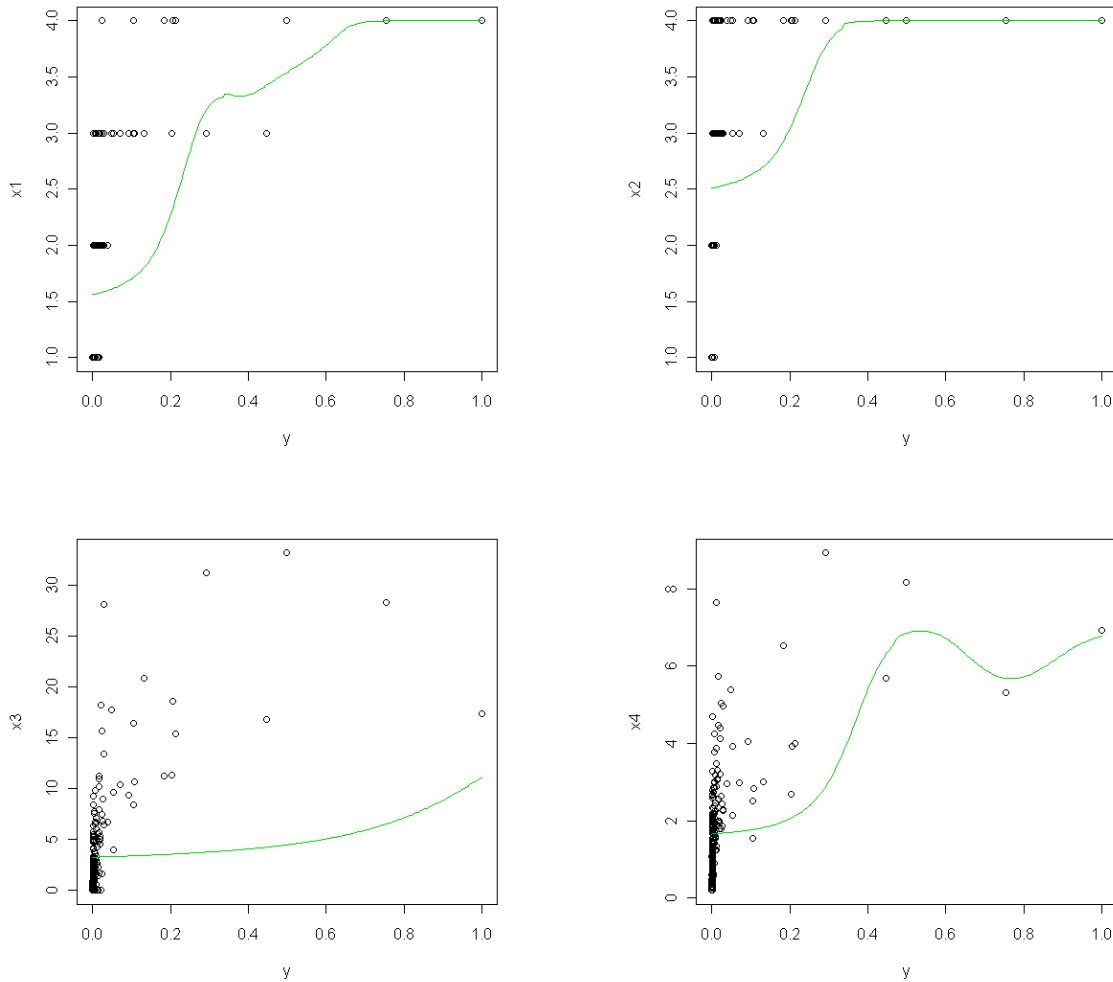
:

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

(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.  $\mu$  7  $\mu$  (  $\mu \mu$  ): 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  $\mu$  (  $\mu \mu$  ): Economics Letters, Journal of Mathematical Economics, Economic Inquiry Canadian Journal of Economics.

Diamond  $\mu$

$\mu$  ,  $\mu$

$\mu$  ,  
 $\mu$   $\mu$

Diamond 1989



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

$\mu \mu$

$\mu\mu$

$(X_1, X_2)$

$(X_3, X_4)$ .

$\mu$

$\mu \mu$

Diamond

$\mu$

$\mu \mu$

$\mu$

$\mu$  .

$\mu$

$\mu$

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$\mu$

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$\mu \mu$

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

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

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<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