

MERENJE EFIKASNOSTI POSLOVNIH SISTEMA

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DEA modeli

Osnovni CCR DEA model (CRS model)

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$$(Max)h_k = \sum_{r=1}^s u_r y_{rk}$$

p.o

$$\sum_{i=1}^m v_i x_{ik} = 1$$

$$\sum_{r=1}^s u_r y_{rj} - \sum_{i=1}^m v_i x_{ij} \leq 0, \quad j = 1, 2, \dots, n$$

$$u_r \geq \varepsilon, \quad r = 1, 2, \dots, s$$

$$v_i \geq \varepsilon, \quad i = 1, 2, \dots, m$$

Osnovni CCR DEA model (CRS model)

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p.o

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$$v_i \geq \varepsilon, \quad i = 1, 2, \dots, m$$



$$u_r, r = 1, \dots, s$$
$$v_i, r = 1, \dots, m$$
$$h_k$$

k-puta

Dualni CCR DEA model (CRS model)

$$(Min) Z_k - \varepsilon \left(\sum_{r=1}^s s_r^+ + \sum_{i=1}^m s_i^- \right)$$

p.o

$$\sum_{j=1}^n \lambda_j \cdot y_{rj} - s_r^+ = y_{rk}, \quad r = 1, 2, \dots, s$$

$$Z_k \cdot x_{ik} - \sum_{j=1}^n \lambda_j x_{ij} - s_i^- = 0, \quad i = 1, 2, \dots, m$$

$$\lambda_j, s_r^+, s_i^- \geq 0; \quad j = 1, 2, \dots, n, \quad r = 1, 2, \dots, s, \quad i = 1, 2, \dots, m,$$



$$\lambda_j, \quad j = 1, \dots, s$$

$$s_r^+, \quad r = 1, \dots, s$$

$$s_i^-, \quad i = 1, \dots, m$$

$$Z_k$$

k-puta

Ciljane vrednosti

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$$x_{ik}'' = Z_{ik}^* x_{ik} - s_i^{-*}, \quad i = 1, 2, \dots, m$$

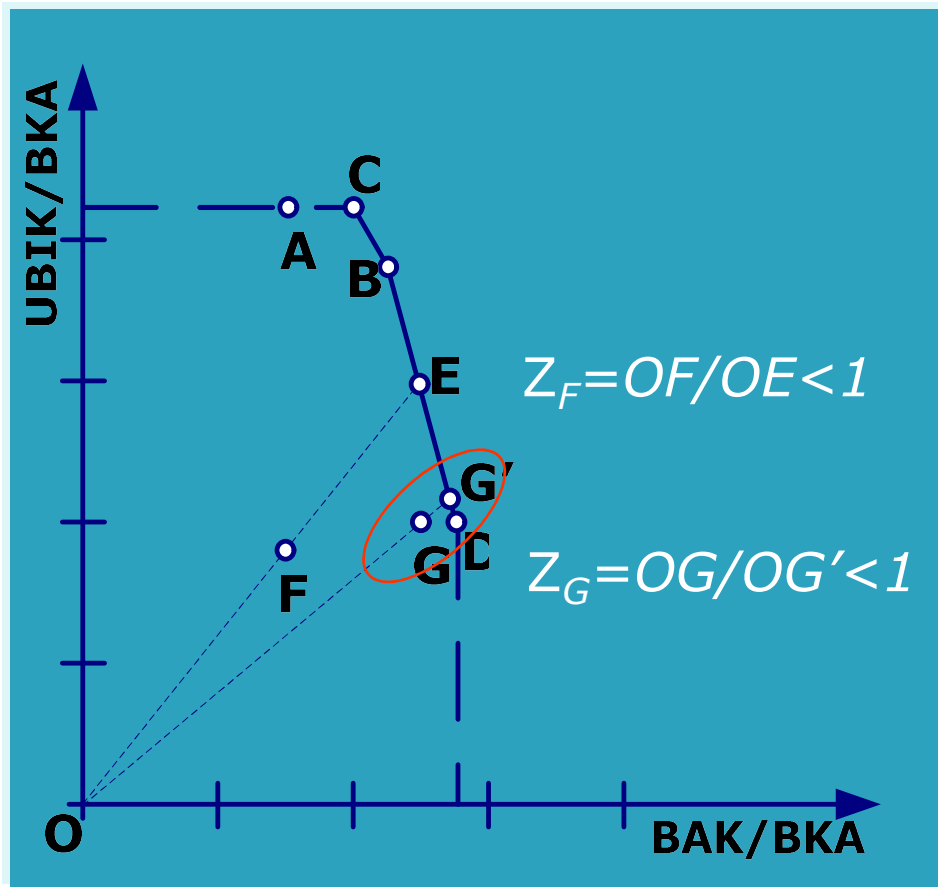
$$y_{rk}'' = y_{rk} + s_r^{+*}, \quad r = 1, 2, \dots, s$$

$$x_{ik}'' = \sum_{j=1}^n \lambda_j x_{ij}, \quad i = 1, 2, \dots, m$$

$$y_{rk}'' = \sum_{j=1}^n \lambda_j y_{rj}, \quad r = 1, 2, \dots, s$$

Orijentacija DEA modela

Ulazno orijentisani



Ciljane vrednosti

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DMU	BKA	BAK	UBIK	Ulazno orijentisani model (U)	Ciljane vrednosti		
				CCR	BKA	BAK	UBIK
A	50	75	210	1	50	25	210
B	50	110	190	1	50	110	190
C	60	120	252	1	60	120	252
D	100	275	200	1	100	275	200
E	40	100	120	1	40	100	120
F	50	75	90	0.6	30	75	90
G	90	225	180	0.92	83.08	225	180