TP 2 Aalises Modelos BCC, IRS, DRS

Tasso Augusto Tomaz Pimenta 2021072198

Table of contents

List of Tables

Definição do Tp

Rode os modelos BCC, IRS, DRS em ambas orientações e analise os resultados.
Identifique os itens abaixo:
- a eficiência (pura,total e escala) das DMUs
- identifique em que escala as DMUs operam para cada modelo
- histograma das eficiências
- identifique as DMUs dentro das eficiências do histograma
- os benchmarks para cada DMU
- os pesos relativos dos inputs e outputs
- apresente as projeções e metas para os inputs e outputs
- calcule o FDH para os dois tipos de abordagem (provisão e distribuição)

Conclusão da analise:

Primeiramente, eu não rodei 100% de todos os testes possiveis, são muitos modelos e no geral são similares então tentei separar os mais interessate para uma analise com a adição de algumas condições para o retorno de escala, as eficiencias mudaram fora que os pesos e as dmus de referencias ficaram mais dispersos do que no ccr porém ao colocar tudo junto num mesmo grafico é possivel analisar que os modelos indicam uma relação, com isso eu consigo indicar o retorno de escala de cada dmu, como crescente e decrescente e as constantes. Eu tentei fazer uma analise na classificação dasa eficiencias, porém todas as eficientes são classificadas como fortementes e nenhuma aparenta ser fracamente eficiente, eu não sei dizer se isso é uma caracteristica do modelo ou se meu codigo está errado em algum ponto.
Ao analisar as metas paras as dmus eu percebi que as metas elas variam de acordo com o retorno de escala de cada dmu, ou seja elas são iguais quando as eficiencias são iguais, e quando as eficiencias são diferentes as metas também são diferentes.

Agora para o FDH eu encontrei valores muitos estranhos, as maiorias das dmus são referencias para elas mesmo, e só piora para a data de Provisão, é dito que gera

um grande numeros de empates mas quase todas empataram.
Eu tentei rodar de todas as formas possiveis, para todos os tipos de retornos porém todas deram resultados iguais basicamente(Eu não sei dizer se o problema ta no meu codigo, mas se tiver tudo o que fiz ta errado)

Dados usados são:

DMU	codigo	I1	I2	I3	O1	O2
Air Canada	1	8352	1302813	3060770.35	6420786	1157081
ANA All Nippon Airways	2	6479	1468332	2556513.78	4286268	2059289
American Airlines	3	23102	3470729	8654892.94	17866791	2417898
British Airways	4	16563	2140181	5304411.47	10079586	4438214
Delta Air Lines	5	17408	2729225	7349946.47	14571329	1671083
Emirates	6	13153	2736947	4717271.61	11276662	6531110
Garuda Indonesia	7	2187	283484	676346.53	1514745	282129
KLM	8	8101	1509071	3027818.18	7347192	4093466
Lufthansa	9	33288	2700757	5759785.56	12398774	6928900
Malaysia Airlines	10	5231	729243	1606904.02	2997171	2072022
Qantas	11	12156	1736844	3156052.26	9945797	2623457
SAS Scandinavian Airlines	12	4046	415270	1108178.33	2304528	344994
Singapore Airlines	13	9467	2128625	3513668.99	7733939	6559460
TAM	14	6810	784048	2015096.39	3935997	155797
Thai Airways	15	7374	1044141	2417856.19	4725671	2157255
United Airlines	16	18460	2906589	7647835.29	14645900	2340509

Modelo BCC:

Com os pesos e benchmarks

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	si(0
0.0	0.0	0.0	0.0	0.0	0.0	0.247	0.332	0.0	0.0	0.422	-0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.274	0.726	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.217	0.0	0.122	0.222	0.0	0.439	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	-0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	0.0	0.0	-0.0
0.0	0.0	0.0	0.0	-0.0	0.0	-0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	si(0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	-0.0	0.0	0.0	0.0	-0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	-0.0	0.0	0.0	0.0	-0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	-0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	1.0	0.0	0.0	-0.0	-0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.279	0.721	0.0	0.0	0.0	0.0	0.04
0.0	0.0	0.0	0.0	0.0	0.0	0.399	0.495	0.0	0.0	0.106	0.0	0.0	0.0	0.0	0.0	0.1
0.0	0.0	0.297	0.0	0.563	0.096	0.0	0.0	0.0	0.0	0.044	0.0	0.0	0.0	0.0	0.0	0.0

Ef	u(0)	u(1)	u(2)	v(0)	v(1)
91.670%	0.959	0.625	0.0	1.285	0.0
74.575%	2.764	0.0	0.0	1.925	0.0
100.000%	0.303	0.006	0.115	0.462	0.0
96.344%	0.07	0.577	0.0	0.597	0.175
100.000%	0.215	0.32	0.0	0.539	0.083
100.000%	0.232	0.345	0.0	0.583	0.089
100.000%	4.063	2.649	0.0	5.449	0.0
100.000%	0.838	0.546	0.0	1.123	0.0
100.000%	0.0	0.601	0.0	0.458	0.129
100.000%	0.0	2.707	0.0	1.315	0.722
100.000%	0.0	1.032	0.0	0.701	0.169
100.000%	0.0	4.512	0.0	3.493	0.205
100.000%	0.0	0.836	0.0	0.265	0.328
88.713%	0.0	2.579	0.0	2.097	0.0
89.249%	0.0	1.952	0.0	1.326	0.32
97.442%	0.21	0.312	0.0	0.526	0.081

Modelo com data de Provisão

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	si(0)	si(1)
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.302	0.0	0.0	0.0	0.242	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.455	0.0	0.0
-0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.502	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.498	0.498	0.0
0.0	0.0	0.791	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.209	1.446	0.0
0.0	0.0	0.612	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.388	0.269	0.0
0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	si(0)	si(1)
0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	-0.0	0.0	0.0	0.0	0.0	-0.0	0.0
0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.265	0.352
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.207	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.793	0.6	0.0
0.0	0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
0.649	0.0	0.0	0.0	0.0	0.0	0.087	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.264	0.0	0.0
0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.074	0.432
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0

Modelo DRS:

Com os pesos e benchmarks

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	si(0)	s
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.311	0.0	0.0	0.48	0.0	0.0	0.0	0.0	0.0	0.0	0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
0.0	0.0	0.0	0.0	0.0	0.217	0.0	0.122	0.222	0.0	0.439	0.0	0.0	0.0	0.0	0.0	0.0	0
0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	-
0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.163	0.0	0.0	0.0	0.0	0.0	0.017	0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	-
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	-0.0	0.0	0.0	0.0	-0.0	-
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.225	0.0	0.0	0.0	0.0	0.183	0.0	0.0	0.0	0.139	0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.239	0.0	0.0	0.0	0.0	0.0	0.095	0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.451	0.0	0.0	0.0	0.0	0.0	0.11	0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.479	0.0	0.0	0.185	0.0	0.0	0.0	0.0	0.0	0.104	0
0.0	0.0	0.297	0.0	0.563	0.096	0.0	0.0	0.0	0.0	0.044	0.0	0.0	0.0	0.0	0.0	0.0	0

Ef	u(0)	u(1)	u(2)	v(0)	v(1)
90.980%	0.984	0.559	0.0	1.285	0.0
72.944%	2.541	0.0	0.0	1.925	0.0
100.000%	0.303	0.006	0.115	0.462	0.0
96.344%	0.07	0.577	0.0	0.597	0.175

Ef	u(0)	u(1)	u(2)	v(0)	v(1)
100.000%	0.215	0.32	0.0	0.539	0.083
100.000%	0.232	0.345	0.0	0.583	0.089
93.311%	0.0	6.636	0.0	5.449	0.0
100.000%	0.0	1.163	0.0	0.804	0.199
100.000%	0.0	0.601	0.0	0.458	0.129
97.652%	0.0	2.465	0.0	0.831	0.965
100.000%	0.0	1.011	0.0	0.698	0.173
96.911%	0.0	4.362	0.0	3.581	0.0
100.000%	0.0	0.825	0.0	0.278	0.323
87.666%	0.0	2.554	0.0	2.097	0.0
88.182%	0.0	1.906	0.0	1.317	0.326
97.442%	0.21	0.312	0.0	0.526	0.081

Modelo IRS:

Com os pesos e benchmarks

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	si(0)	si(
0.0	0.0	0.0	0.0	0.0	0.0	0.247	0.332	0.0	0.0	0.422	-0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.274	0.726	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.483	0.0	0.0	1.578	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.908	0.0	0.0	0.444	0.0	0.0	0.0	0.0	0.0	0.318	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.688	0.0	0.0	0.973	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.075	0.0	0.0	0.138	0.0	0.292	0.0	0.0	0.0	0.0	0.1
0.0	0.0	-0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	-0.
0.0	0.0	0.0	0.0	-0.0	0.0	-0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.776	0.0	0.0	0.0	0.0	0.01	0.0	0.0	0.0	1.566	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	-0.0	0.0	0.0	-0.0	-0.
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.279	0.721	0.0	0.0	0.0	0.0	0.042	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.399	0.495	0.0	0.0	0.106	0.0	0.0	0.0	0.0	0.0	0.1	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.765	0.0	0.0	1.009	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Ef	u(0)	u(1)	u(2)	v(0)	v(1)
91.670%	0.959	0.625	0.0	1.285	0.0

Ef	u(0)	u(1)	u(2)	v(0)	v(1)
74.575%	2.764	0.0	0.0	1.925	0.0
92.819%	0.354	0.201	0.0	0.462	0.0
90.964%	0.0	0.902	0.0	0.623	0.154
98.870%	0.434	0.246	0.0	0.566	0.0
97.791%	0.351	0.0	0.529	0.58	0.091
100.000%	4.845	0.0	2.436	5.449	0.0
100.000%	0.999	0.0	0.502	1.123	0.0
94.480%	0.0	0.688	0.0	0.232	0.269
100.000%	0.0	2.505	0.0	0.794	0.984
100.000%	0.0	1.032	0.0	0.701	0.169
100.000%	0.0	4.512	0.0	3.493	0.205
100.000%	0.0	0.836	0.0	0.265	0.328
88.713%	0.0	2.579	0.0	2.097	0.0
89.249%	0.0	1.952	0.0	1.326	0.32
93.561%	0.431	0.245	0.0	0.564	0.0

Grafico Eficiencia x DMU: Dados de Provisão

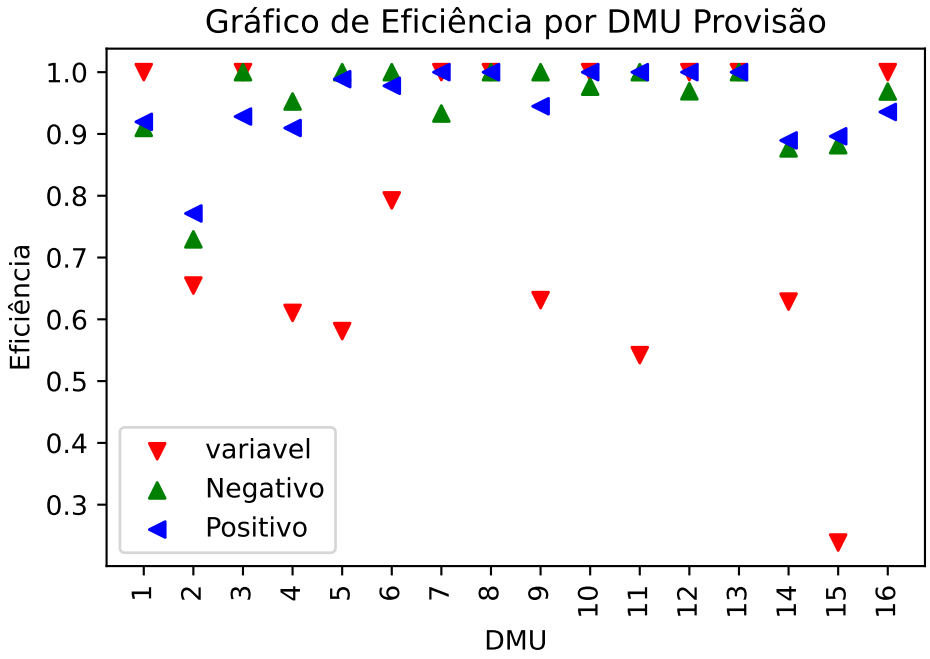

Figure 1: Ef x DMU Provisão: Verde: DRS, Vermelho: BCC, Azul: IRS

Grafico Eficiencia x DMU : Dados de Distribuição

As eficiencias de cada modelos no mesmo grafico para comparação de classificação de cada

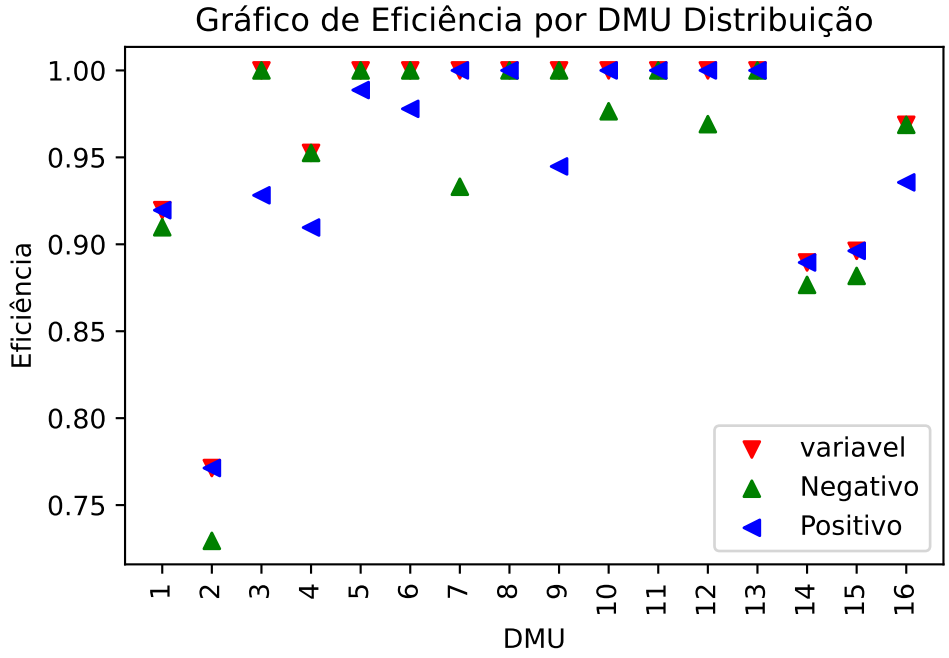

Figure 2: Ef x DMU Distribuição: Verde: DRS, Vermelho: BCC, Azul: IRS

Classificação das Eficiencias Distribuição

BCC

DMU	Eficiência	Classificação
1	91.91%	Ineficiente
2	77.11%	Ineficiente
3	100.00%	Fortemente Eficiente
4	95.23%	Ineficiente
5	100.00%	Fortemente Eficiente
6	100.00%	Fortemente Eficiente
7	100.00%	Fortemente Eficiente
8	100.00%	Fortemente Eficiente
9	100.00%	Fortemente Eficiente
10	100.00%	Fortemente Eficiente

DMU	Eficiência	Classificação
11	100.00%	Fortemente Eficiente
12	100.00%	Fortemente Eficiente
13	100.00%	Fortemente Eficiente
14	88.92%	Ineficiente
15	89.61%	Ineficiente
16	96.86%	Ineficiente

DRS

DMU	Eficiência	Classificação
1	90.93%	Ineficiente
2	72.92%	Ineficiente
3	100.00%	Fortemente Eficiente
4	95.23%	Ineficiente
5	100.00%	Fortemente Eficiente
6	100.00%	Fortemente Eficiente
7	93.30%	Ineficiente
8	100.00%	Fortemente Eficiente
9	100.00%	Fortemente Eficiente
10	97.63%	Ineficiente
11	100.00%	Fortemente Eficiente
12	96.88%	Ineficiente
13	100.00%	Fortemente Eficiente
14	87.61%	Ineficiente
15	88.16%	Ineficiente
16	96.86%	Ineficiente

IRS

DMU	Eficiência	Classificação
1	91.91%	Ineficiente
2	77.11%	Ineficiente
3	92.65%	Ineficiente
4	90.91%	Ineficiente
5	98.69%	Ineficiente
6	97.78%	Ineficiente
7	100.00%	Fortemente Eficiente

DMU	Eficiência	Classificação
8	100.00%	Fortemente Eficiente
9	94.32%	Ineficiente
10	100.00%	Fortemente Eficiente
11	100.00%	Fortemente Eficiente
12	100.00%	Fortemente Eficiente
13	100.00%	Fortemente Eficiente
14	88.92%	Ineficiente
15	89.61%	Ineficiente
16	93.40%	Ineficiente

Retorno de Escala

DMU	CRS ef	BCC ef	DRS ef	IRS ef	Retorno
1	91.00%	92.00%	91.00%	92.00%	Crescente
2	72.90%	77.10%	72.90%	77.10%	Crescente
3	92.80%	100.00%	100.00%	92.80%	Decrescente
4	91.00%	95.30%	95.30%	91.00%	Decrescente
5	98.90%	100.00%	100.00%	98.90%	Decrescente
6	97.80%	100.00%	100.00%	97.80%	Decrescente
7	93.30%	100.00%	93.30%	100.00%	Crescente
8	100.00%	100.00%	100.00%	100.00%	Constante
9	94.50%	100.00%	100.00%	94.50%	Decrescente
10	97.70%	100.00%	97.70%	100.00%	Crescente
11	100.00%	100.00%	100.00%	100.00%	Constante
12	96.90%	100.00%	96.90%	100.00%	Crescente
13	100.00%	100.00%	100.00%	100.00%	Constante
14	87.70%	89.00%	87.70%	89.00%	Crescente
15	88.20%	89.60%	88.20%	89.60%	Crescente
16	93.60%	96.90%	96.90%	93.60%	Decrescente

Metas

BCC

DMU	Meta-Inputs(0)	Meta-Inputs(1)	Meta-Inputs(2)	Meta-Outputs(0)	Meta-Outputs(1)
1	0.09%	0.09%	-18.19%	9.19%	119.16%
2	0.02%	-20.10%	-6.77%	34.13%	48.07%
3	0.00%	0.00%	0.00%	0.00%	0.00%
4	0.04%	-0.01%	-23.51%	3.80%	3.79%
5	0.00%	0.00%	0.00%	0.00%	0.00%
6	0.00%	0.00%	0.00%	0.00%	0.00%
7	0.00%	0.00%	0.00%	0.00%	0.00%
8	0.00%	0.00%	0.00%	0.00%	0.00%
9	0.00%	0.00%	0.00%	0.00%	0.00%
10	0.00%	0.00%	0.00%	0.00%	0.00%
11	0.00%	0.00%	0.00%	0.00%	0.00%
12	0.00%	0.00%	0.00%	0.00%	0.00%
13	0.00%	0.00%	0.00%	0.00%	0.00%
14	-7.36%	-0.01%	-16.65%	12.71%	529.46%
15	-16.31%	0.01%	-13.01%	12.06%	12.04%
16	-0.00%	-0.00%	-4.54%	2.62%	2.60%

DRS

DMU	Meta-Inputs(0)	Meta-Inputs(1)	Meta-Inputs(2)	Meta-Outputs(0)	Meta-Outputs(1)
1	0.03%	0.01%	-19.74%	9.94%	118.85%
2	0.03%	-17.78%	-5.25%	37.13%	59.02%
3	0.00%	0.00%	0.00%	0.00%	0.00%
4	0.04%	-0.01%	-23.51%	3.80%	3.79%
5	0.00%	0.00%	0.00%	0.00%	0.00%
6	0.00%	0.00%	0.00%	0.00%	0.00%
7	-9.40%	-0.13%	-23.94%	7.03%	51.57%
8	0.00%	0.00%	0.00%	0.00%	0.00%
9	0.00%	0.00%	0.00%	0.00%	0.00%
10	-32.04%	-0.02%	-17.59%	2.38%	2.38%
11	0.00%	0.00%	0.00%	0.00%	0.00%
12	-28.19%	-0.04%	-31.93%	3.15%	81.74%
13	0.00%	0.00%	0.00%	0.00%	0.00%
14	-19.50%	-0.09%	-29.36%	13.96%	659.44%
15	-16.88%	0.00%	-15.87%	13.41%	13.39%
16	-0.00%	-0.00%	-4.54%	2.62%	2.60%

IRS

DMU	Meta-Inputs(0)	Meta-Inputs(1)	Meta-Inputs(2)	Meta-Outputs(0)	Meta-Outputs(1)
1	0.09%	0.09%	-18.19%	9.19%	119.16%
2	0.02%	-20.10%	-6.77%	34.13%	48.07%
3	-0.03%	-0.03%	-25.56%	7.70%	152.99%
4	-23.00%	0.06%	-21.75%	10.00%	9.99%
5	-0.04%	-0.04%	-29.88%	1.10%	221.28%
6	-0.02%	-9.26%	-0.02%	2.24%	2.25%
7	0.00%	0.00%	0.00%	0.00%	0.00%
8	0.00%	0.00%	0.00%	0.00%	0.00%
9	-56.49%	0.02%	-6.03%	5.86%	5.87%
10	0.00%	0.00%	0.00%	0.00%	0.00%
11	0.00%	0.00%	0.00%	0.00%	0.00%
12	0.00%	0.00%	0.00%	0.00%	0.00%
13	0.00%	0.00%	0.00%	0.00%	0.00%
14	-7.36%	-0.01%	-16.65%	12.71%	529.46%
15	-16.31%	0.01%	-13.01%	12.06%	12.04%
16	0.01%	0.01%	-28.07%	6.90%	146.89%

Modelo FDH

Para dados de Provisão

Retorno de Escala Constante

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0

Para dados de Distribuição

Retorno de Escala Constantes

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0

Retorno de Escala Positivo

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0

Retorno de Escala Negativo

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0

Retorno de Escala variavel

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0