

ภาคผนวก

ค่าสถิติของการประมาณค่าประสิทธิภาพทางเทคนิคและ ปัจจัยที่มีผลต่อประสิทธิภาพการผลิต

การประมาณค่าประสิทธิภาพทางเทคนิค

Results from DEAP Version 2.1

Instruction file = is1-ins.txt

Data file = is1-dta.txt

Input orientated DEA

Scale assumption: VRS

Two-stage DEA method

EFFICIENCY SUMMARY:

firm	crste	vrste	scale
1	0.651	0.782	0.832 irs
2	0.797	1.000	0.797 irs
3	1.000	1.000	1.000 -
4	1.000	1.000	1.000 -
5	0.265	0.624	0.426 irs
6	0.451	0.871	0.517 irs
7	0.384	0.531	0.722 irs
8	1.000	1.000	1.000 -
9	1.000	1.000	1.000 -
10	0.593	0.801	0.740 irs
11	1.000	1.000	1.000 -
12	1.000	1.000	1.000 -
13	1.000	1.000	1.000 -
14	0.812	0.817	0.994 drs
15	1.000	1.000	1.000 -
mean	0.797	0.895	0.868

Note: crste = technical efficiency from CRS DEA

vrste = technical efficiency from VRS DEA

scale = scale efficiency = crste/vrste

Note also that all subsequent tables refer to VRS results

SUMMARY OF OUTPUT SLACKS:

firm	output:	1	2	3	4	5
1		6866.953	4651.102	0.000	30067.294	20600.873
2		0.000	0.000	0.000	0.000	0.000
3		0.000	0.000	0.000	0.000	0.000
4		0.000	0.000	0.000	0.000	0.000
5		12326.965	1009.553	4009.553	21886.564	36980.894
6		5127.551	3714.881	11362.121	24795.337	21007.657
7		9571.407	1286.150	0.000	16921.095	28714.213
8		0.000	0.000	0.000	0.000	0.000
9		0.000	0.000	0.000	0.000	0.000
10		9625.115	0.000	0.000	17322.153	28875.336
11		0.000	0.000	0.000	0.000	0.000
12		0.000	0.000	0.000	0.000	0.000
13		0.000	0.000	0.000	0.000	0.000
14		0.000	0.000	2988.085	13254.839	0.000
15		0.000	0.000	0.000	0.000	0.000
mean		2901.199	710.779	1223.984	8283.152	9078.598

SUMMARY OF INPUT SLACKS:

firm	input:	1	2	3	4
1		63.229	0.000	0.000	739.801
2		0.000	0.000	0.000	0.000
3		0.000	0.000	0.000	0.000

4	0.000	0.000	0.000	0.000
5	0.000	25.088	0.000	92.813
6	0.000	0.000	0.000	0.000
7	0.000	15.857	0.000	21.630
8	0.000	0.000	0.000	0.000
9	0.000	0.000	0.000	0.000
10	0.000	0.742	0.000	0.000
11	0.000	0.000	0.000	0.000
12	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000
14	0.000	5.676	0.000	1508.932
15	0.000	0.000	0.000	0.000
mean	4.215	3.157	0.000	157.545

SUMMARY OF PEERS:

firm peers:

1	9	13	4
2	2		
3	3		
4	4		
5	15	13	
6	4	15	2 3
7	4	13	15
8	8		
9	9		
10	13	9	3 4 15
11	11		
12	12		
13	13		

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14 8 13 15 9
 15 15

SUMMARY OF PEER WEIGHTS:

(in same order as above)

firm peer weights:

1	0.053	0.609	0.338
2	1.000		
3	1.000		
4	1.000		
5	0.663	0.337	
6	0.433	0.211	0.171 0.185
7	0.214	0.572	0.214
8	1.000		
9	1.000		
10	0.549	0.060	0.088 0.124 0.179
11	1.000		
12	1.000		
13	1.000		
14	0.032	0.919	0.021 0.028
15	1.000		

PEER COUNT SUMMARY:

(i.e., no. times each firm is a peer for another)

firm peer count:

1	0
2	1
3	2
4	4

5 0
 6 0
 7 0
 8 1
 9 3
 10 0
 11 0
 12 0
 13 5
 14 0
 15 5

SUMMARY OF OUTPUT TARGETS:

firm output:	1	2	3	4	5
1	17581.243	11793.962	14285.710	69710.154	52743.733
2	10000.000	7500.000	7500.000	33500.000	30000.000
3	5000.000	3125.000	18750.000	31250.000	15000.000
4	13333.330	6666.670	16666.670	55833.330	40000.000
5	19326.965	5009.553	7009.553	44636.564	57980.894
6	12627.551	5589.881	13237.121	43545.337	37882.657
7	17428.547	6286.150	10000.000	53778.235	52285.643
8	60000.000	100000.000	60000.000	165000.000	180000.000
9	40000.000	100000.000	60000.000	280000.000	120000.000
10	17958.445	11666.670	13333.330	65655.483	53875.336
11	24000.000	24000.000	6000.000	68000.000	72000.000
12	19166.660	1166.670	1166.670	43500.000	57500.000
13	18000.000	7000.000	9000.000	59200.000	54000.000
14	20000.000	12500.000	11988.085	68254.839	60000.000
15	20000.000	4000.000	6000.000	37250.000	60000.000

SUMMARY OF INPUT TARGETS:

firm input:	1	2	3	4
1	160.330	129.334	5868.505	1244.309
2	100.000	72.900	5000.000	1900.000
3	93.750	74.750	10000.000	612.500
4	75.000	97.670	6666.670	2000.000
5	133.652	151.979	4365.871	1243.673
6	88.017	102.605	6532.002	1633.000
7	151.806	131.927	4781.974	1116.937
8	354.000	424.050	25000.000	9000.000
9	250.000	280.930	20000.000	3600.000
10	160.253	137.877	6009.481	1137.795
11	300.000	70.750	8000.000	980.000
12	150.000	221.670	7000.000	1073.330
13	200.000	133.800	4200.000	620.000
14	204.263	147.767	5310.842	991.250
15	100.000	161.200	4450.000	1560.000

FIRM BY FIRM RESULTS:

Results for firm: 1

Technical efficiency = 0.782

Scale efficiency = 0.832 (irs)

PROJECTION SUMMARY:

variable	original value	radial movement	slack movement	projected value
output 1	10714.290	0.000	6866.953	17581.243
output 2	7142.860	0.000	4651.102	11793.962
output 3	14285.710	0.000	0.000	14285.710
output 4	39642.860	0.000	30067.294	69710.154
output 5	32142.860	0.000	20600.873	52743.733

input	1	285.710	-62.151	-63.229	160.330
input	2	165.290	-35.956	0.000	129.334
input	3	7500.000	-1631.495	0.000	5868.505
input	4	2535.710	-551.600	-739.801	1244.309

LISTING OF PEERS:

peer	lambda	weight
9	0.053	
13	0.609	
4	0.338	

Results for firm: 2

Technical efficiency = 1.000

Scale efficiency = 0.797 (irs)

PROJECTION SUMMARY:

variable		original	radial	slack	projected
		value	movement	movement	value
output	1	10000.000	0.000	0.000	10000.000
output	2	7500.000	0.000	0.000	7500.000
output	3	7500.000	0.000	0.000	7500.000
output	4	33500.000	0.000	0.000	33500.000
output	5	30000.000	0.000	0.000	30000.000
input	1	100.000	0.000	0.000	100.000
input	2	72.900	0.000	0.000	72.900
input	3	5000.000	0.000	0.000	5000.000
input	4	1900.000	0.000	0.000	1900.000

LISTING OF PEERS:

peer	lambda	weight
2	1.000	

Results for firm: 3

Technical efficiency = 1.000

Scale efficiency = 1.000 (crs)

PROJECTION SUMMARY:

variable		original	radial	slack	projected
		value	movement	movement	value
output	1	5000.000	0.000	0.000	5000.000
output	2	3125.000	0.000	0.000	3125.000
output	3	18750.000	0.000	0.000	18750.000
output	4	31250.000	0.000	0.000	31250.000
output	5	15000.000	0.000	0.000	15000.000
input	1	93.750	0.000	0.000	93.750
input	2	74.750	0.000	0.000	74.750
input	3	10000.000	0.000	0.000	10000.000
input	4	612.500	0.000	0.000	612.500

LISTING OF PEERS:

peer	lambda	weight
3	1.000	

Results for firm: 4

Technical efficiency = 1.000

Scale efficiency = 1.000 (crs)

PROJECTION SUMMARY:

variable		original	radial	slack	projected
		value	movement	movement	value
output	1	13333.330	0.000	0.000	13333.330
output	2	6666.670	0.000	0.000	6666.670
output	3	16666.670	0.000	0.000	16666.670
output	4	55833.330	0.000	0.000	55833.330
output	5	40000.000	0.000	0.000	40000.000
input	1	75.000	0.000	0.000	75.000

input	2	97.670	0.000	0.000	97.670
input	3	6666.670	0.000	0.000	6666.670
input	4	2000.000	0.000	0.000	2000.000

LISTING OF PEERS:

peer lambda weight

4 1.000

Results for firm: 5

Technical efficiency = 0.624

Scale efficiency = 0.426 (irs)

PROJECTION SUMMARY:

variable		original	radial	slack	projected
		value	movement	movement	value
output	1	7000.000	0.000	12326.965	19326.965
output	2	4000.000	0.000	1009.553	5009.553
output	3	3000.000	0.000	4009.553	7009.553
output	4	22750.000	0.000	21886.564	44636.564
output	5	21000.000	0.000	36980.894	57980.894
input	1	214.290	-80.638	0.000	133.652
input	2	283.900	-106.833	-25.088	151.979
input	3	7000.000	-2634.129	0.000	4365.871
input	4	2142.850	-806.363	-92.813	1243.673

LISTING OF PEERS:

peer lambda weight

15 0.663

13 0.337

Results for firm: 6

Technical efficiency = 0.871

Scale efficiency = 0.517 (irs)

PROJECTION SUMMARY:

variable		original	radial	slack	projected
		value	movement	movement	value
output	1	7500.000	0.000	5127.551	12627.551
output	2	1875.000	0.000	3714.881	5589.881
output	3	1875.000	0.000	11362.121	13237.121
output	4	18750.000	0.000	24795.337	43545.337
output	5	16875.000	0.000	21007.657	37882.657
input	1	101.060	-13.043	0.000	88.017
input	2	117.810	-15.205	0.000	102.605
input	3	7500.000	-967.998	0.000	6532.002
input	4	1875.000	-242.000	0.000	1633.000

LISTING OF PEERS:

peer	lambda weight
4	0.433
15	0.211
2	0.171
3	0.185

Results for firm: 7

Technical efficiency = 0.531

Scale efficiency = 0.722 (irs)

PROJECTION SUMMARY:

variable		original	radial	slack	projected
		value	movement	movement	value
output	1	7857.140	0.000	9571.407	17428.547
output	2	5000.000	0.000	1286.150	6286.150
output	3	10000.000	0.000	0.000	10000.000
output	4	36857.140	0.000	16921.095	53778.235
output	5	23571.430	0.000	28714.213	52285.643

input	1	285.710	-133.904	0.000	151.806
input	2	278.140	-130.356	-15.857	131.927
input	3	9000.000	-4218.026	0.000	4781.974
input	4	2142.860	-1004.293	-21.630	1116.937

LISTING OF PEERS:

peer lambda weight

4	0.214
13	0.572
15	0.214

Results for firm: 8

Technical efficiency = 1.000

Scale efficiency = 1.000 (crs)

PROJECTION SUMMARY:

variable		original	radial	slack	projected
		value	movement	movement	value
output	1	60000.000	0.000	0.000	60000.000
output	2	100000.000	0.000	0.000	100000.000
output	3	60000.000	0.000	0.000	60000.000
output	4	165000.000	0.000	0.000	165000.000
output	5	180000.000	0.000	0.000	180000.000
input	1	354.000	0.000	0.000	354.000
input	2	424.050	0.000	0.000	424.050
input	3	25000.000	0.000	0.000	25000.000
input	4	9000.000	0.000	0.000	9000.000

LISTING OF PEERS:

peer lambda weight

8	1.000
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Results for firm: 9

Technical efficiency = 1.000

Scale efficiency = 1.000 (crs)

PROJECTION SUMMARY:

variable	original value	radial movement	slack movement	projected value
output 1	40000.000	0.000	0.000	40000.000
output 2	100000.000	0.000	0.000	100000.000
output 3	60000.000	0.000	0.000	60000.000
output 4	280000.000	0.000	0.000	280000.000
output 5	120000.000	0.000	0.000	120000.000
input 1	250.000	0.000	0.000	250.000
input 2	280.930	0.000	0.000	280.930
input 3	20000.000	0.000	0.000	20000.000
input 4	3600.000	0.000	0.000	3600.000

LISTING OF PEERS:

peer	lambda	weight
9	1.000	

Results for firm: 10

Technical efficiency = 0.801

Scale efficiency = 0.740 (irs)

PROJECTION SUMMARY:

variable	original value	radial movement	slack movement	projected value
output 1	8333.330	0.000	9625.115	17958.445
output 2	11666.670	0.000	0.000	11666.670
output 3	13333.330	0.000	0.000	13333.330
output 4	48333.330	0.000	17322.153	65655.483
output 5	25000.000	0.000	28875.336	53875.336
input 1	200.000	-39.747	0.000	160.253

input	2	173.000	-34.381	-0.742	137.877
input	3	7500.000	-1490.519	0.000	6009.481
input	4	1420.000	-282.205	0.000	1137.795

LISTING OF PEERS:

peer lambda weight

13	0.549
9	0.060
3	0.088
4	0.124
15	0.179

Results for firm: 11

Technical efficiency = 1.000

Scale efficiency = 1.000 (crs)

PROJECTION SUMMARY:

variable		original	radial	slack	projected
		value	movement	movement	value
output	1	24000.000	0.000	0.000	24000.000
output	2	24000.000	0.000	0.000	24000.000
output	3	6000.000	0.000	0.000	6000.000
output	4	68000.000	0.000	0.000	68000.000
output	5	72000.000	0.000	0.000	72000.000
input	1	300.000	0.000	0.000	300.000
input	2	70.750	0.000	0.000	70.750
input	3	8000.000	0.000	0.000	8000.000
input	4	980.000	0.000	0.000	980.000

LISTING OF PEERS:

peer lambda weight

11	1.000
----	-------

Results for firm: 12

Technical efficiency = 1.000

Scale efficiency = 1.000 (crs)

PROJECTION SUMMARY:

variable	original	radial	slack	projected
	value	movement	movement	value
output 1	19166.660	0.000	0.000	19166.660
output 2	1166.670	0.000	0.000	1166.670
output 3	1166.670	0.000	0.000	1166.670
output 4	43500.000	0.000	0.000	43500.000
output 5	57500.000	0.000	0.000	57500.000
input 1	150.000	0.000	0.000	150.000
input 2	221.670	0.000	0.000	221.670
input 3	7000.000	0.000	0.000	7000.000
input 4	1073.330	0.000	0.000	1073.330

LISTING OF PEERS:

peer	lambda	weight
12	1.000	

Results for firm: 13

Technical efficiency = 1.000

Scale efficiency = 1.000 (crs)

PROJECTION SUMMARY:

variable	original	radial	slack	projected
	value	movement	movement	value
output 1	18000.000	0.000	0.000	18000.000
output 2	7000.000	0.000	0.000	7000.000
output 3	9000.000	0.000	0.000	9000.000
output 4	59200.000	0.000	0.000	59200.000
output 5	54000.000	0.000	0.000	54000.000
input 1	200.000	0.000	0.000	200.000

input	2	133.800	0.000	0.000	133.800
input	3	4200.000	0.000	0.000	4200.000
input	4	620.000	0.000	0.000	620.000

LISTING OF PEERS:

peer lambda weight

13 1.000

Results for firm: 14

Technical efficiency = 0.817

Scale efficiency = 0.994 (drs)

PROJECTION SUMMARY:

variable		original	radial	slack	projected
		value	movement	movement	value
output	1	20000.000	0.000	0.000	20000.000
output	2	12500.000	0.000	0.000	12500.000
output	3	9000.000	0.000	2988.085	11988.085
output	4	55000.000	0.000	13254.839	68254.839
output	5	60000.000	0.000	0.000	60000.000
input	1	250.000	-45.737	0.000	204.263
input	2	187.800	-34.358	-5.676	147.767
input	3	6500.000	-1189.158	0.000	5310.842
input	4	3060.000	-559.819	-1508.932	991.250

LISTING OF PEERS:

peer lambda weight

8 0.032

13 0.919

15 0.021

9 0.028

Results for firm: 15

Technical efficiency = 1.000

Scale efficiency = 1.000 (crs)

PROJECTION SUMMARY:

variable		original	radial	slack	projected
		value	movement	movement	value
output	1	20000.000	0.000	0.000	20000.000
output	2	4000.000	0.000	0.000	4000.000
output	3	6000.000	0.000	0.000	6000.000
output	4	37250.000	0.000	0.000	37250.000
output	5	60000.000	0.000	0.000	60000.000
input	1	100.000	0.000	0.000	100.000
input	2	161.200	0.000	0.000	161.200
input	3	4450.000	0.000	0.000	4450.000
input	4	1560.000	0.000	0.000	1560.000

LISTING OF PEERS:

peer	lambda	weight
15	1.000	

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ผลการวิเคราะห์ปัจจัยที่มีผลต่อประสิทธิภาพการผลิต

```
--> RESET
Initializing LIMDEP Version 9.0.1 (January 1, 2007).
--> READ;FILE="D:\Documents and
Settings\somphotrat\Desktop\tobit.xls"$
-->
TOBIT;Lhs=EFF;Rhs=ONE,EDU,EXP,AREA,DGROUP,DLAND,DIRR,DEXPORT;Limits=0
,1$
Normal exit from iterations. Exit status=0.
```

```
+-----+
| Limited Dependent Variable Model - CENSORED |
| Maximum Likelihood Estimates                |
| Model estimated: Jul 11, 2010 at 10:43:41PM. |
| Dependent variable                         EFF |
| Weighting variable                         None |
| Number of observations                     15   |
| Iterations completed                      15   |
| Log likelihood function                   -.8395346 |
| Number of parameters                       9   |
| Info. Criterion: AIC =                    1.31194 |
|   Finite Sample: AIC =                   -3.71194 |
| Info. Criterion: BIC =                    1.73677 |
| Info. Criterion: HQIC =                   1.30741 |
| Threshold values for the model:           |
| Lower= .0000      Upper= 1.0000          |
| ANOVA based fit measure = .000015         |
| DECOMP based fit measure = .063411        |
+-----+
```

```
+-----+
-+
|Variable| Coefficient | Standard Error |b/St.Er.|P[|Z|>z]| Mean of
X|
+-----+
-+
-----+Primary Index Equation for Model
Constant| .85489948 | .27548786 | 3.103 | .0019 |
EDU | .06458371 | .01831488 | 3.526 | .0004 | 10.2666667
EXP | -.00464587 | .01558578 | -.298 | .7656 | 12.0666667
AREA | .02446770 | .01719774 | 1.423 | .1548 | 8.90000000
DGROUP | -.86244245 | .22963371 | -3.756 | .0002 | .33333333
DLAND | -.59261579 | .17486609 | -3.389 | .0007 | .33333333
DIRR | -.40504292 | .18718318 | -2.164 | .0305 | .20000000
DEXPORT | -.05988393 | .30279223 | -.198 | .8432 | .20000000
-----+Disturbance standard deviation
Sigma | .15185842 | .05506202 | 2.758 | .0058 |
```

ประวัติผู้เขียน

ชื่อ-สกุล นายสมโภชน์รัตน์ คุณภาพดีเลิศ

วัน เดือน ปีเกิด 1 พฤษภาคม 2525

ประวัติการศึกษา สำเร็จการศึกษามัธยมศึกษาตอนปลาย โรงเรียนสาธิตมหาวิทยาลัยเชียงใหม่
ปีการศึกษา 2543

สำเร็จการศึกษาระดับปริญญาวิทยาศาสตรบัณฑิต(เกษตรศาสตร์) สาขาพืชสวน
มหาวิทยาลัยเชียงใหม่ ปีการศึกษา 2547

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