

## LAMPIRAN

Lampiran 1. Identitas Petani Cabai Merah di Desa Wukirsari Tahun 2017

NO	Nama Responden	Umur (Tahun)	Tingkat Pendidikan	Pengalaman Bertani (Tahun)	Status Kepemilikan Lahan
1	Mardi Wiyono	64	SD	52	MILIK SENDIRI
2	Suratman	48	SMA	22	MILIK SENDIRI
3	Wahyudi	52	SMA	20	MILIK SENDIRI
4	Ernawan	47	SMA	35	SEWA
5	Sri Suwanto	55	SMA	22	MILIK SENDIRI
6	Sujanji	50	SMA	30	SEWA
7	Jarno	48	SMA	17	MILIK SENDIRI
8	Barjono	53	SMA	16	MILIK SENDIRI
9	Mulyono	42	SMA	20	MILIK SENDIRI
10	Suharyono	56	SMP	25	MILIK SENDIRI
11	Karso	66	SMP	46	MILIK SENDIRI
12	Nyoto Prayitno	70	SD	55	MILIK SENDIRI
13	Hariono	68	SMA	50	MILIK SENDIRI
14	Supriono	50	SD	35	MILIK SENDIRI
15	Nugroho	48	SMA	27	MILIK SENDIRI
16	Siswanto	51	SMP	36	MILIK SENDIRI
17	Supriyadi	46	SMA	25	MILIK SENDIRI
18	Supratono	57	SMA	35	MILIK SENDIRI
19	Suwono	50	SD	40	MILIK SENDIRI
20	Eran	45	SMP	30	MILIK SENDIRI
21	karsono	52	SMP	45	MILIK SENDIRI
22	mudiarjo	49	SMA	30	MILIK SENDIRI
23	suharyanto	52	SMP	35	MILIK SENDIRI
24	mursiddi	58	SD	50	MILIK SENDIRI
25	basuki	40	SMP	10	MILIK SENDIRI
26	sirus	50	SD	35	MILIK SENDIRI
27	widi	48	SMP	32	MILIK SENDIRI
28	suharno	51	SMP	35	MILIK SENDIRI
29	suparno	47	SMA	27	MILIK SENDIRI
30	jumari	47	SMA	30	MILIK SENDIRI
31	endo winarti	47	SMA	28	MILIK SENDIRI
32	sanatal	60	SD	50	MILIK SENDIRI

33	ahnann	51	SMP	30	MILIK SENDIRI
34	Ngatemo	62	SD	34	MILIK SENDIRI
35	Sartono	55	SMA	25	MILIK SENDIRI
36	Mujiyono	48	SMP	27	MILIK SENDIRI
37	Riyadi	45	SMA	32	MILIK SENDIRI
38	Suhar	51	SMP	37	MILIK SENDIRI
39	Nur Salam	50	SD	27	MILIK SENDIRI
40	Andi	41	SMA	10	MILIK SENDIRI
41	Sudiharjo	50	SD	37	MILIK SENDIRI
42	Mudiyono	45	SD	30	SEWA
43	Kaspandi	63	SD	47	MILIK SENDIRI
44	Bandi	48	SMP	22	MILIK SENDIRI
45	Rifai	47	SMP	25	MILIK SENDIRI
46	Sudirman	60	SMA	30	MILIK SENDIRI
47	Ponimin	55	SMP	40	MILIK SENDIRI
48	Sakimin	48	SMP	27	MILIK SENDIRI
49	Muh Jariludin	43	SMA	25	MILIK SENDIRI
50	Siswanto	41	SMA	2	SEWA
51	Subarjo	41	SMA	24	MILIK SENDIRI
52	Wandi	65	SMA	50	SEWA
53	Saryanto	69	SMP	55	SAKAP
54	Biyanto	67	SMA	21	MILIK SENDIRI
55	Anton	41	SMP	20	MILIK SENDIRI
56	Wahyudi	45	SMP	25	MILIK SENDIRI
57	Riyadi	56	TS	36	MILIK SENDIRI
58	sukadi	53	SD	30	MILIK SENDIRI
59	Suparso	51	SMA	32	MILIK SENDIRI
60	Harto	55	SMA	25	MILIK SENDIRI
61	Mardi	61	SMP	40	MILIK SENDIRI
62	Jumingso	60	SMP	30	MILIK SENDIRI
63	Basuki	52	SMP	30	MILIK SENDIRI
64	murjiono	48	SMP	27	MILIK SENDIRI
65	Jumari	51	SMP	28	MILIK SENDIRI
66	subari	49	SD	32	MILIK SENDIRI
67	suparno	48	SMP	28	MILIK SENDIRI
68	Harso	51	SMA	30	MILIK SENDIRI
69	sumari	65	SMP	38	MILIK SENDIRI
70	Daruki	62	SMA	35	MILIK SENDIRI

71	Hariyanto	50	SMP	30	MILIK SENDIRI
72	nasrudin	53	SD	22	MILIK SENDIRI
73	sewono	51	SMP	35	MILIK SENDIRI
74	Dul salam	45	SMP	20	MILIK SENDIRI
75	Suhaji	66	SMA	50	MILIK SENDIRI
76	gunadi	58	SMP	27	MILIK SENDIRI
77	hadi saronno	51	SMP	28	MILIK SENDIRI
78	sukeni	51	SMP	20	MILIK SENDIRI
79	maryono	48	SMA	20	MILIK SENDIRI
80	Budiman	58	SD	40	MILIK SENDIRI

Lampiran 2. Hasil Analisis Fungsi Produksi *Stochastic Frontier*

Output from the program FRONTIER (Version 4.1c)

instruction file = terminal  
data file = dum-dta.txt

Tech. Eff. Effects Frontier (see B&C 1993)  
The model is a production function  
The dependent variable is logged

the ols estimates are :

	coefficient	standard-error	t-ratio
beta 0	-0.11766896E+01	0.93257714E+00	-0.12617611E+01
beta 1	0.83344414E+00	0.26790201E+00	0.31110038E+01
beta 2	-0.38661997E-02	0.18244533E+00	-0.21191004E-01
beta 3	0.34795106E+00	0.92604635E-01	0.37573828E+01
beta 4	0.31622384E-01	0.37678219E-01	0.83927494E+00
beta 5	-0.31102175E-01	0.30509135E-01	-0.10194381E+01
beta 6	0.42761942E-02	0.67432621E-01	0.63414327E-01
beta 7	0.10399629E-01	0.17814521E-01	0.58377258E+00
beta 8	-0.99700901E-01	0.30481223E+00	-0.32708957E+00
beta 9	-0.13251956E-01	0.33858351E-01	-0.39139401E+00
sigma-squared	0.12552888E+00		

log likelihood function = -0.25165047E+02

the estimates after the grid search were :

beta 0	-0.90548416E+00
beta 1	0.83344414E+00
beta 2	-0.38661997E-02
beta 3	0.34795106E+00
beta 4	0.31622384E-01
beta 5	-0.31102175E-01
beta 6	0.42761942E-02
beta 7	0.10399629E-01
beta 8	-0.99700901E-01
beta 9	-0.13251956E-01
delta 0	0.00000000E+00
delta 1	0.00000000E+00
delta 2	0.00000000E+00
delta 3	0.00000000E+00
delta 4	0.00000000E+00

sigma-squared 0.18339014E+00  
 gamma 0.63000000E+00

iteration = 0 func evals = 20 llf = -0.24682365E+02  
 -0.90548416E+00 0.83344414E+00-0.38661997E-02 0.34795106E+00 0.31622384E-01  
 -0.31102175E-01 0.42761942E-02 0.10399629E-01-0.99700901E-01-0.13251956E-01  
 0.00000000E+00 0.00000000E+00 0.00000000E+00 0.00000000E+00 0.00000000E+00  
 0.18339014E+00 0.63000000E+00

gradient step

iteration = 5 func evals = 43 llf = -0.24328217E+02  
 -0.90681272E+00 0.83918682E+00-0.20885553E-03 0.33702715E+00 0.30289850E-01  
 -0.21645508E-01 0.13128052E-03 0.36721755E-02-0.94560029E-01-0.16492044E-01  
 -0.25559697E-02 0.60210963E-02-0.14497079E-01-0.17452568E-02-0.16708791E-01  
 0.17387328E+00 0.63337726E+00

iteration = 10 func evals = 65 llf = -0.23310224E+02  
 -0.93936656E+00 0.87159737E+00-0.55206777E-03 0.27041728E+00 0.29324212E-01  
 -0.23387074E-01 0.73003638E-02 0.36384968E-02-0.38433172E-01-0.95978994E-02  
 -0.35731793E-01 0.12576251E-01-0.22500417E-01-0.19358818E-02-0.30996183E+00  
 0.18699598E+00 0.68066542E+00

iteration = 15 func evals = 86 llf = -0.22938630E+02  
 -0.11278451E+01 0.77978374E+00 0.94177130E-01 0.30600900E+00 0.31298545E-01  
 -0.18425812E-01-0.23979073E-02 0.16746987E-02-0.64653328E-01-0.17856176E-01  
 -0.11223575E+00 0.16373332E-01-0.17362388E-01-0.39709922E-02-0.45004522E+00  
 0.18581466E+00 0.66360815E+00

iteration = 20 func evals = 157 llf = -0.22666008E+02  
 -0.11231968E+01 0.80617275E+00 0.66457435E-01 0.30341196E+00 0.33463504E-01  
 -0.17383250E-01-0.29837100E-02 0.21151113E-02-0.64850821E-01-0.17728546E-01  
 -0.25627700E+00 0.17242312E-01-0.23017735E-01-0.36022155E-02-0.63186893E+00  
 0.23212541E+00 0.74330617E+00

iteration = 25 func evals = 265 llf = -0.22568892E+02  
 -0.10817683E+01 0.80868571E+00 0.55004679E-01 0.29882141E+00 0.33380395E-01  
 -0.17505441E-01-0.95830284E-02 0.26959300E-02-0.52611195E-01-0.15096107E-01  
 -0.88850619E+00 0.34599707E-01-0.69619849E-01-0.71400212E-02-0.10718922E+01  
 0.32712924E+00 0.78703075E+00

iteration = 30 func evals = 358 llf = -0.22544284E+02  
 -0.11008877E+01 0.82258674E+00 0.50278769E-01 0.29206615E+00 0.33462776E-01  
 -0.17511476E-01-0.10201984E-01 0.27475333E-02-0.55918559E-01-0.15479230E-01  
 -0.12601721E+01 0.41082146E-01-0.10006269E+00-0.65805904E-02-0.14463072E+01  
 0.42930474E+00 0.83703823E+00

iteration = 35 func evals = 470 llf = -0.22534895E+02  
 -0.11031310E+01 0.82810962E+00 0.48294236E-01 0.28813048E+00 0.33934605E-01  
 -0.16236977E-01-0.11402159E-01 0.24953234E-02-0.55520712E-01-0.15898224E-01  
 -0.14148711E+01 0.42757117E-01-0.12978450E+00-0.28751185E-02-0.17796430E+01  
 0.52499050E+00 0.86566351E+00

iteration = 40 func evals = 587 llf = -0.22526451E+02

-0.11403632E+01 0.84317152E+00 0.47997182E-01 0.28308098E+00 0.33390455E-01  
-0.15414375E-01-0.11903511E-01 0.18472498E-02-0.65396204E-01-0.17383668E-01  
-0.19518170E+01 0.49740112E-01-0.15180769E+00-0.16826647E-02-0.19345280E+01  
0.63161693E+00 0.89193151E+00  
iteration = 45 func evals = 707 llf = -0.22518486E+02  
-0.11635874E+01 0.84731517E+00 0.49962410E-01 0.28329624E+00 0.33408052E-01  
-0.15215289E-01-0.11479770E-01 0.16348684E-02-0.72516241E-01-0.18229696E-01  
-0.21847008E+01 0.52025738E-01-0.13701252E+00-0.37260235E-02-0.20239593E+01  
0.66183321E+00 0.89798264E+00  
iteration = 50 func evals = 825 llf = -0.22512474E+02  
-0.12065233E+01 0.86505196E+00 0.49530207E-01 0.27839733E+00 0.33199274E-01  
-0.14269621E-01-0.12031777E-01 0.86632577E-03-0.85617891E-01-0.20017061E-01  
-0.25823249E+01 0.57018659E-01-0.14274759E+00-0.40674163E-02-0.21773833E+01  
0.76351424E+00 0.91478649E+00  
iteration = 55 func evals = 936 llf = -0.22512122E+02  
-0.12119350E+01 0.86560083E+00 0.50159889E-01 0.27805392E+00 0.33181622E-01  
-0.14187714E-01-0.11936004E-01 0.84403575E-03-0.86046479E-01-0.20210459E-01  
-0.26221203E+01 0.57191778E-01-0.14507447E+00-0.41543169E-02-0.22009556E+01  
0.78142587E+00 0.91682598E+00  
iteration = 60 func evals = 1058 llf = -0.22511917E+02  
-0.12074828E+01 0.86481545E+00 0.49811273E-01 0.27797517E+00 0.33248326E-01  
-0.14211903E-01-0.12213774E-01 0.89289433E-03-0.84892715E-01-0.20031016E-01  
-0.27893233E+01 0.60637714E-01-0.15802686E+00-0.44406150E-02-0.23371963E+01  
0.82260846E+00 0.92052688E+00  
iteration = 65 func evals = 1175 llf = -0.22511869E+02  
-0.12095054E+01 0.86575574E+00 0.49709120E-01 0.27766655E+00 0.33223080E-01  
-0.14159175E-01-0.12275370E-01 0.85750835E-03-0.85467491E-01-0.20119261E-01  
-0.28839876E+01 0.61421034E-01-0.16104815E+00-0.38025726E-02-0.23858415E+01  
0.84419644E+00 0.92262831E+00  
iteration = 67 func evals = 1200 llf = -0.22511869E+02  
-0.12095094E+01 0.86576998E+00 0.49701937E-01 0.27766106E+00 0.33223461E-01  
-0.14159193E-01-0.12278615E-01 0.85699621E-03-0.85470270E-01-0.20119621E-01  
-0.28858957E+01 0.61450547E-01-0.16117695E+00-0.37978347E-02-0.23874314E+01  
0.84473043E+00 0.92267435E+00

the final mle estimates are :

	coefficient	standard-error	t-ratio
beta 0	-0.12095094E+01	0.91954136E+00	-0.13153399E+01
beta 1	0.86576998E+00	0.29054357E+00	0.29798284E+01
beta 2	0.49701937E-01	0.16779663E+00	0.29620343E+00
beta 3	0.27766106E+00	0.10032064E+00	0.27677360E+01
beta 4	0.33223461E-01	0.36148891E-01	0.91907277E+00
beta 5	-0.14159193E-01	0.29922082E-01	-0.47320212E+00
beta 6	-0.12278615E-01	0.61502025E-01	-0.19964571E+00
beta 7	0.85699621E-03	0.17136617E-01	0.50009651E-01
beta 8	-0.85470270E-01	0.29293150E+00	-0.29177562E+00
beta 9	-0.20119621E-01	0.33857926E-01	-0.59423667E+00
delta 0	-0.28858957E+01	0.15265672E+02	-0.18904479E+00
delta 1	0.61450547E-01	0.25162430E+00	0.24421547E+00
delta 2	-0.16117695E+00	0.82298738E+00	-0.19584377E+00
delta 3	-0.37978347E-02	0.90804371E-01	-0.41824360E-01
delta 4	-0.23874314E+01	0.99673152E+01	-0.23952603E+00
sigma-squared	0.84473043E+00	0.36108174E+01	0.23394437E+00
gamma	0.92267435E+00	0.33303705E+00	0.27704856E+01

log likelihood function = -0.22511869E+02

LR test of the one-sided error = 0.53063575E+01

with number of restrictions = 6

[note that this statistic has a mixed chi-square distribution]

number of iterations = 67

(maximum number of iterations set at : 100)

number of cross-sections = 80

number of time periods = 1

total number of observations = 80

thus there are: 0 obsns not in the panel

covariance matrix :

```

0.84555631E+00 -0.18178400E+00 -0.49473535E-01 0.19312101E-01 0.71415469E-02
0.23111603E-04 -0.11523397E-01 0.34748974E-02 0.22591061E+00 0.24576058E-01
0.24508388E+01 -0.22269575E-01 -0.56559565E-02 0.51631329E-03 0.60845091E+00
-0.50608688E+00 -0.60188671E-01

```

-0.18178400E+00 0.84415564E-01 -0.18132786E-01 -0.13357366E-01 -0.15217916E-03  
0.93193990E-03 0.98455166E-04 -0.11341252E-02 -0.60823175E-01 -0.50520184E-02  
-0.13260238E+01 0.13664539E-01 -0.48008453E-01 0.36420388E-02 -0.70758150E+00  
0.35479765E+00 0.36535958E-01  
-0.49473535E-01 -0.18132786E-01 0.28155708E-01 0.33469121E-03 -0.13898304E-02  
-0.25554698E-03 -0.87884239E-04 0.16693987E-03 -0.11035038E-01 -0.20062714E-02  
0.20907897E+00 -0.21761016E-02 0.24029409E-01 -0.22631301E-02 0.23051268E+00  
-0.82535227E-01 -0.69891554E-02  
0.19312101E-01 -0.13357366E-01 0.33469121E-03 0.10064232E-01 -0.69898377E-03  
-0.10329149E-02 0.79328446E-03 0.24289300E-03 0.36787738E-02 0.59257013E-03  
0.50948250E+00 -0.63004674E-02 0.27677618E-01 -0.14281950E-02 0.36621866E+00  
-0.15354512E+00 -0.15179744E-01  
0.71415469E-02 -0.15217916E-03 -0.13898304E-02 -0.69898377E-03 0.13067423E-02  
0.41199889E-03 -0.37650304E-04 0.15444429E-04 0.17929810E-02 0.14717956E-03  
0.19888040E-01 -0.28374559E-03 -0.17753413E-02 0.11857702E-03 -0.23002891E-01  
0.49616743E-02 0.40467145E-03  
0.23111603E-04 0.93193990E-03 -0.25554698E-03 -0.10329149E-02 0.41199889E-03  
0.89533101E-03 -0.23955091E-03 -0.58461216E-04 0.20581715E-03 -0.17682834E-03  
-0.73523905E-01 0.85207224E-03 -0.37919824E-02 0.16280523E-03 -0.61361960E-01  
0.25387460E-01 0.25949854E-02  
-0.11523397E-01 0.98455166E-04 -0.87884239E-04 0.79328446E-03 -0.37650304E-04  
-0.23955091E-03 0.37824991E-02 0.23559760E-03 -0.28759194E-02 -0.10794012E-03  
0.19588597E+00 -0.33433537E-02 0.13510055E-01 -0.17054960E-03 0.14870483E+00  
-0.51630927E-01 -0.45785377E-02  
0.34748974E-02 -0.11341252E-02 0.16693987E-03 0.24289300E-03 0.15444429E-04  
-0.58461216E-04 0.23559760E-03 0.29366363E-03 0.27315982E-03 0.10592981E-03  
0.41527414E-01 -0.35604086E-03 0.19209654E-03 -0.10389646E-03 0.11777986E-01  
-0.87716513E-02 -0.10229409E-02  
0.22591061E+00 -0.60823175E-01 -0.11035038E-01 0.36787738E-02 0.17929810E-02  
0.20581715E-03 -0.28759194E-02 0.27315982E-03 0.85808865E-01 0.70328281E-02  
0.68892008E+00 -0.60309044E-02 -0.59866626E-03 -0.27223849E-03 0.15176048E+00  
-0.13538864E+00 -0.15776558E-01  
0.24576058E-01 -0.50520184E-02 -0.20062714E-02 0.59257013E-03 0.14717956E-03  
-0.17682834E-03 -0.10794012E-03 0.10592981E-03 0.70328281E-02 0.11463591E-02  
0.10516626E+00 -0.90536680E-03 0.52872081E-03 -0.12895623E-03 0.32837607E-01  
-0.23312918E-01 -0.26654881E-02  
0.24508388E+01 -0.13260238E+01 0.20907897E+00 0.50948250E+00 0.19888040E-01  
-0.73523905E-01 0.19588597E+00 0.41527414E-01 0.68892008E+00 0.10516626E+00  
0.23304074E+03 -0.35573482E+01 0.10513830E+02 -0.75439934E-01 0.13845937E+03  
-0.52009415E+02 -0.47664228E+01  
-0.22269575E-01 0.13664539E-01 -0.21761016E-02 -0.63004674E-02 -0.28374559E-03  
0.85207224E-03 -0.33433537E-02 -0.35604086E-03 -0.60309044E-02 -0.90536680E-03  
-0.35573482E+01 0.63314790E-01 -0.17792163E+00 -0.61767477E-02 -0.21866455E+01  
0.77704470E+00 0.70121053E-01  
-0.56559565E-02 -0.48008453E-01 0.24029409E-01 0.27677618E-01 -0.17753413E-02  
-0.37919824E-02 0.13510055E-01 0.19209654E-03 -0.59866626E-03 0.52872081E-03



0.10513830E+02 -0.17792163E+00 0.67730822E+00 -0.43932564E-02 0.78531816E+01  
-0.27253205E+01 -0.24230173E+00  
0.51631329E-03 0.36420388E-02 -0.22631301E-02 -0.14281950E-02 0.11857702E-03  
0.16280523E-03 -0.17054960E-03 -0.10389646E-03 -0.27223849E-03 -0.12895623E-03  
-0.75439934E-01 -0.61767477E-02 -0.43932564E-02 0.82454339E-02 -0.10443416E+00  
0.54654130E-01 0.50419954E-02  
0.60845091E+00 -0.70758150E+00 0.23051268E+00 0.36621866E+00 -0.23002891E-01  
-0.61361960E-01 0.14870483E+00 0.11777986E-01 0.15176048E+00 0.32837607E-01  
0.13845937E+03 -0.21866455E+01 0.78531816E+01 -0.10443416E+00 0.99347373E+02  
-0.35156763E+02 -0.31711097E+01  
-0.50608688E+00 0.35479765E+00 -0.82535227E-01 -0.15354512E+00 0.49616743E-02  
0.25387460E-01 -0.51630927E-01 -0.87716513E-02 -0.13538864E+00 -0.23312918E-01  
-0.52009415E+02 0.77704470E+00 -0.27253205E+01 0.54654130E-01 -0.35156763E+02  
0.13038003E+02 0.11956537E+01  
-0.60188671E-01 0.36535958E-01 -0.69891554E-02 -0.15179744E-01 0.40467145E-03  
0.25949854E-02 -0.45785377E-02 -0.10229409E-02 -0.15776558E-01 -0.26654881E-02  
-0.47664228E+01 0.70121053E-01 -0.24230173E+00 0.50419954E-02 -0.31711097E+01  
0.11956537E+01 0.11091368E+00

technical efficiency estimates :

firm	year	eff.-est.	firm	year	eff.-est.
1	1	0.85630114E+00	43	1	0.34415693E+00
2	1	0.90139125E+00	44	1	0.88233610E+00
3	1	0.85614288E+00	45	1	0.73514690E+00
4	1	0.85433238E+00	46	1	0.79016375E+00
5	1	0.92816989E+00	47	1	0.77463754E+00
6	1	0.72913762E+00	48	1	0.85602074E+00
7	1	0.88233300E+00	49	1	0.79117653E+00
8	1	0.88747359E+00	50	1	0.87326733E+00
9	1	0.85731307E+00	51	1	0.79652117E+00
10	1	0.88466656E+00	52	1	0.68915351E+00
11	1	0.90995263E+00	53	1	0.58978101E+00
12	1	0.91053045E+00	54	1	0.75821699E+00
13	1	0.90498797E+00	55	1	0.81344710E+00
14	1	0.88196392E+00	56	1	0.85735500E+00
15	1	0.92475383E+00	57	1	0.85576967E+00
16	1	0.86004990E+00	58	1	0.88134572E+00
17	1	0.92244780E+00	59	1	0.79308492E+00
18	1	0.91246216E+00	60	1	0.80396949E+00
19	1	0.88722653E+00	61	1	0.86176978E+00
20	1	0.88442276E+00	62	1	0.81517258E+00
21	1	0.91617897E+00	63	1	0.86193021E+00
22	1	0.86710328E+00	64	1	0.90218858E+00
23	1	0.89598304E+00	65	1	0.82902034E+00
24	1	0.90219293E+00	66	1	0.83805388E+00
25	1	0.89434388E+00	67	1	0.77585757E+00
26	1	0.89797897E+00	68	1	0.56031115E+00
27	1	0.94013568E+00	69	1	0.78532029E+00
28	1	0.88225964E+00	70	1	0.84426526E+00
29	1	0.93317868E+00	71	1	0.88785704E+00
30	1	0.91123266E+00	72	1	0.80600926E+00
31	1	0.84104343E+00	73	1	0.86326532E+00
32	1	0.59577375E+00	74	1	0.89495916E+00
33	1	0.82939564E+00	75	1	0.90491136E+00
34	1	0.79530369E+00	76	1	0.69505284E+00
35	1	0.66886983E+00	77	1	0.86098551E+00
36	1	0.78182439E+00	78	1	0.81713973E+00
37	1	0.68467605E+00	79	1	0.82182795E+00
38	1	0.86962053E+00	80	1	0.83360351E+00
39	1	0.82427070E+00			
40	1	0.88055576E+00			
41	1	0.84817965E+00			
42	1	0.48710686E+00			

mean efficiency = 0.82660399E+00

### Lampiran 3. Hasil Analisis Fungsi Biaya *Stochastic Frontier*

Output from the program FRONTIER (Version 4.1c)

instruction file = terminal  
data file = biB-dta.txt

Tech. Eff. Effects Frontier (see B&C 1993)  
The model is a cost function  
The dependent variable is logged

the ols estimates are :

	coefficient	standard-error	t-ratio
beta 0	-0.12008219E+02	0.69939800E+01	-0.17169365E+01
beta 1	-0.10444908E+00	0.15078081E+00	-0.69272128E+00
beta 2	0.10482781E+00	0.30871524E+00	0.33956149E+00
beta 3	0.63963824E-02	0.76534746E-02	0.83574882E+00
beta 4	0.21895606E-02	0.84832588E-02	0.25810372E+00
beta 5	0.12425103E+00	0.49607907E-01	0.25046619E+01
beta 6	0.83654587E-02	0.60135835E-02	0.13910938E+01
beta 7	0.19987176E+01	0.62791774E+00	0.31830884E+01
beta 8	0.30540656E-02	0.59734432E-02	0.51127389E+02
beta 9	0.59103505E+00	0.38084435E-01	0.15519071E+02
sigma-squared	0.59483848E-01		

log likelihood function = 0.47081939E+01

the estimates after the grid search were :

beta 0	-0.12220798E+02
beta 1	-0.10444908E+00
beta 2	0.10482781E+00
beta 3	0.63963824E-02
beta 4	0.21895606E-02
beta 5	0.12425103E+00
beta 6	0.83654587E-02
beta 7	0.19987176E+01
beta 8	0.30540656E-02
beta 9	0.59103505E+00
delta 0	0.00000000E+00
delta 1	0.00000000E+00
delta 2	0.00000000E+00
delta 3	0.00000000E+00
delta 4	0.00000000E+00

sigma-squared 0.97238040E-01  
 gamma 0.73000000E+00

iteration = 0 func evals = 20 llf = 0.58113121E+01  
 -0.12220798E+02-0.10444908E+00 0.10482781E+00 0.63963824E-02 0.21895606E-02  
 0.12425103E+00 0.83654587E-02 0.19987176E+01 0.30540656E-02 0.59103505E+00  
 0.00000000E+00 0.00000000E+00 0.00000000E+00 0.00000000E+00 0.00000000E+00  
 0.97238040E-01 0.73000000E+00

gradient step

iteration = 5 func evals = 42 llf = 0.70341675E+01  
 -0.12220491E+02-0.10256757E+00 0.10717681E+00-0.81906253E-03-0.26643046E-02  
 0.12560402E+00 0.86101870E-02 0.20023704E+01 0.20864594E-02 0.59355993E+00  
 0.39384255E-03-0.19423250E-02 0.21177131E-01-0.42063466E-02-0.38629495E-02  
 0.98922632E-01 0.73121358E+00

iteration = 10 func evals = 65 llf = 0.85716836E+01  
 -0.12222843E+02-0.19167440E+00 0.15969572E+00 0.92258144E-03-0.62897250E-02  
 0.15587225E+00 0.91694249E-02 0.19919985E+01 0.19546307E-02 0.59832088E+00  
 -0.28143016E-02-0.92620668E-02 0.51168718E-01 0.37168564E-02-0.26284432E+00  
 0.12826024E+00 0.81014274E+00

iteration = 15 func evals = 82 llf = 0.98516086E+01  
 -0.12230627E+02-0.22043048E+00 0.44740120E+00-0.16605682E-02-0.93539011E-02  
 0.12120555E+00 0.77670565E-02 0.18647397E+01 0.30992740E-02 0.59145586E+00  
 0.95042099E-01-0.85753071E-02 0.57289859E-01 0.52345581E-02-0.46085731E+00  
 0.13070916E+00 0.87344806E+00

iteration = 20 func evals = 169 llf = 0.10557337E+02  
 -0.11870303E+02-0.23627582E+00 0.47634340E+00-0.15784953E-02-0.95841747E-02  
 0.11188375E+00 0.71110276E-02 0.18239459E+01 0.36939797E-02 0.59770751E+00  
 0.54370946E+00-0.90030729E-02 0.34864551E-01 0.21326127E-02-0.42971046E+00  
 0.88708021E-01 0.82592868E+00

iteration = 25 func evals = 277 llf = 0.10677998E+02  
 -0.10360754E+02-0.25043800E+00 0.48281785E+00-0.12008223E-02-0.90670971E-02  
 0.11173272E+00 0.70762492E-02 0.16808904E+01 0.37636848E-02 0.60121907E+00  
 0.56080112E+00-0.43310313E-02 0.23922806E-01-0.18966586E-03-0.37693506E+00  
 0.72962231E-01 0.82996879E+00

iteration = 30 func evals = 392 llf = 0.10850013E+02  
 -0.46429718E+01-0.26971754E+00 0.48378501E+00-0.10050896E-02-0.88096968E-02  
 0.10886044E+00 0.71011620E-02 0.11528938E+01 0.52781478E-02 0.60639459E+00  
 0.62463825E+00-0.10441704E-02 0.19044366E-01-0.18374044E-02-0.37584049E+00  
 0.60411592E-01 0.90211762E+00

iteration = 35 func evals = 472 llf = 0.12005591E+02  
 -0.17117489E+01-0.31841052E+00 0.49876090E+00-0.36586333E-02-0.10076742E-01  
 0.11910477E+00 0.66046180E-02 0.88363820E+00 0.34862419E-02 0.61809200E+00  
 0.67072480E+00 0.61440821E-03 0.18014895E-01-0.25824649E-02-0.42280461E+00  
 0.61646981E-01 0.99999999E+00

pt better than entering pt cannot be found

iteration = 38 func evals = 496 llf = 0.12030453E+02  
 -0.17312722E+01 -0.31833534E+00 0.49875956E+00 -0.36611928E-02 -0.10082569E-01  
 0.11903540E+00 0.66002653E-02 0.88549419E+00 0.34856327E-02 0.61811219E+00  
 0.67032443E+00 0.60250747E-03 0.18027859E-01 -0.25735422E-02 -0.42276978E+00  
 0.61731236E-01 0.99999999E+00

the final mle estimates are :

	coefficient	standard-error	t-ratio
beta 0	-0.17312722E+01	0.23371525E+01	-0.74076130E+00
beta 1	-0.31833534E+00	0.12563427E+00	-0.25338257E+01
beta 2	0.49875956E+00	0.26457862E+00	0.18851091E+01
beta 3	-0.36611928E-02	0.55816176E-02	-0.65593759E+00
beta 4	-0.10082569E-01	0.62178878E-02	-0.16215424E+01
beta 5	0.11903540E+00	0.43180583E-01	0.27566881E+01
beta 6	0.66002653E-02	0.48426505E-02	0.13629448E+01
beta 7	0.88549419E+00	0.19658105E+00	0.45044738E+01
beta 8	0.34856327E-02	0.51272688E-02	0.67982249E+00
beta 9	0.61811219E+00	0.29505020E-01	0.20949391E+02
delta 0	0.67032443E+00	0.32861247E+00	0.20398631E+01
delta 1	0.60250747E-03	0.68016135E-02	0.88583021E-01
delta 2	0.18027859E-01	0.14490132E-01	0.12441474E+01
delta 3	-0.25735422E-02	0.56280484E-02	-0.45727080E+00
delta 4	-0.42276978E+00	0.12367317E+00	-0.34184438E+01
sigma-squared	0.61731236E-01	0.12632568E-01	0.48866734E+01
gamma	0.99999999E+00	0.10500221E-02	0.95236092E+03

log likelihood function = 0.12030453E+02

LR test of the one-sided error = 0.14644519E+02

with number of restrictions = 6

[note that this statistic has a mixed chi-square distribution]

number of iterations = 38

(maximum number of iterations set at : 100)

number of cross-sections = 80

number of time periods = 1

total number of observations = 80

thus there are: 0 obsns not in the panel  
 covariance matrix :

0.54622820E+01 0.17196703E-03 -0.30254569E-01 -0.29015172E-02 -0.43497866E-02  
-0.49836284E-01 -0.73606001E-03 0.66551412E+00 0.64946879E-03 0.27189975E-01  
-0.50832591E+00 -0.11009543E-01 0.35286779E-01 0.11519545E-01 -0.92257362E-01  
0.53353465E-01 0.27665086E-02  
0.17196703E-03 0.15783969E-01 -0.33036986E-03 -0.40334802E-04 -0.65675543E-04  
0.13720359E-02 0.16474754E-03 -0.80885035E-02 -0.12442347E-03 0.15920628E-04  
-0.17710201E-02 0.17045755E-03 -0.33657470E-03 -0.18406301E-03 0.36402808E-02  
-0.13919303E-03 -0.28246691E-06  
-0.30254569E-01 -0.33036986E-03 0.70001847E-01 0.28960713E-03 -0.50960414E-04  
-0.88820909E-03 -0.15449275E-03 -0.36102278E-01 0.10842280E-03 -0.43327071E-02  
0.15776444E-01 -0.40357415E-03 0.62483658E-03 0.22601444E-03 -0.56326843E-02  
-0.21313025E-03 -0.32381698E-05  
-0.29015172E-02 -0.40334802E-04 0.28960713E-03 0.31154455E-04 0.71086198E-05  
-0.32720175E-04 -0.52482997E-05 0.14325314E-03 -0.43035091E-05 0.56589702E-04  
-0.22455672E-03 -0.28679988E-05 0.18460435E-04 0.80431673E-05 -0.12994509E-03  
0.11049489E-04 0.12472674E-06  
-0.43497866E-02 -0.65675543E-04 -0.50960414E-04 0.71086198E-05 0.38662129E-04  
-0.10818224E-03 -0.65513359E-05 0.51887607E-03 -0.32556811E-05 0.99273623E-04  
-0.25444795E-03 -0.39150568E-05 0.55601148E-05 0.11114457E-04 -0.87230517E-04  
0.18856305E-04 0.14566909E-06  
-0.49836284E-01 0.13720359E-02 -0.88820909E-03 -0.32720175E-04 -0.10818224E-03  
0.18645627E-02 0.47438621E-04 0.35274744E-02 -0.80338809E-04 0.24462191E-04  
0.24232148E-03 -0.65210182E-04 0.93183430E-04 0.14353980E-04 0.56408267E-03  
0.23044704E-03 0.18477335E-06  
-0.73606001E-03 0.16474754E-03 -0.15449275E-03 -0.52482997E-05 -0.65513359E-05  
0.47438621E-04 0.23451264E-04 0.67118651E-04 -0.78840056E-05 0.12025144E-04  
-0.10180299E-03 0.53360939E-05 -0.87266434E-05 -0.34893906E-05 -0.89279159E-04  
0.20999745E-04 0.70134624E-07  
0.66551412E+00 -0.80885035E-02 -0.36102278E-01 0.14325314E-03 0.51887607E-03  
0.35274744E-02 0.67118651E-04 0.38644109E-01 -0.86970983E-05 -0.82969873E-03  
0.37518749E-01 0.12258879E-02 -0.33965078E-02 -0.11410439E-02 0.10370576E-01  
-0.49646612E-02 0.19367670E-03  
0.64946879E-03 -0.12442347E-03 0.10842280E-03 -0.43035091E-05 -0.32556811E-05  
-0.80338809E-04 -0.78840056E-05 -0.86970983E-05 0.26288886E-04 0.67068119E-05  
0.13474809E-03 -0.34656168E-05 -0.79690184E-07 0.26369782E-05 -0.87944311E-04  
0.59023624E-05 0.49464131E-07  
0.27189975E-01 0.15920628E-04 -0.43327071E-02 0.56589702E-04 0.99273623E-04  
0.24462191E-04 0.12025144E-04 -0.82969873E-03 0.67068119E-05 0.87054619E-03  
-0.26005185E-03 0.35858743E-04 -0.12818404E-03 -0.18127590E-04 0.55966842E-03  
-0.10420382E-03 -0.57534316E-06  
-0.50832591E+00 -0.17710201E-02 0.15776444E-01 -0.22455672E-03 -0.25444795E-03  
0.24232148E-03 -0.10180299E-03 0.37518749E-01 0.13474809E-03 -0.26005185E-03  
0.10798615E+00 -0.19802586E-02 -0.13573036E-02 0.44432435E-03 -0.13046349E-01  
0.13436253E-02 -0.37125451E-05  
-0.11009543E-01 0.17045755E-03 -0.40357415E-03 -0.28679988E-05 -0.39150568E-05

-0.65210182E-04 0.53360939E-05 0.12258879E-02 -0.34656168E-05 0.35858743E-04  
-0.19802586E-02 0.46261947E-04 -0.13314053E-04 -0.24480902E-04 0.95960647E-04  
0.56691395E-04 0.67650468E-07  
0.35286779E-01 -0.33657470E-03 0.62483658E-03 0.18460435E-04 0.55601148E-05  
0.93183430E-04 -0.87266434E-05 -0.33965078E-02 -0.79690184E-07 -0.12818404E-03  
-0.13573036E-02 -0.13314053E-04 0.20996391E-03 0.30481933E-04 -0.52461460E-03  
-0.65099206E-04 0.17411306E-06  
0.11519545E-01 -0.18406301E-03 0.22601444E-03 0.80431673E-05 0.11114457E-04  
0.14353980E-04 -0.34893906E-05 -0.11410439E-02 0.26369782E-05 -0.18127590E-04  
0.44432435E-03 -0.24480902E-04 0.30481933E-04 0.31674929E-04 -0.12921551E-03  
-0.61818367E-04 -0.41988993E-07  
-0.92257362E-01 0.36402808E-02 -0.56326843E-02 -0.12994509E-03 -0.87230517E-04  
0.56408267E-03 -0.89279159E-04 0.10370576E-01 -0.87944311E-04 0.55966842E-03  
-0.13046349E-01 0.95960647E-04 -0.52461460E-03 -0.12921551E-03 0.15295053E-01  
0.29406372E-03 0.13490218E-05  
0.53353465E-01 -0.13919303E-03 -0.21313025E-03 0.11049489E-04 0.18856305E-04  
0.23044704E-03 0.20999745E-04 -0.49646612E-02 0.59023624E-05 -0.10420382E-03  
0.13436253E-02 0.56691395E-04 -0.65099206E-04 -0.61818367E-04 0.29406372E-03  
0.15958178E-03 -0.14326217E-06  
0.27665086E-02 -0.28246691E-06 -0.32381698E-05 0.12472674E-06 0.14566909E-06  
0.18477335E-06 0.70134624E-07 0.19367670E-03 0.49464131E-07 -0.57534316E-06  
-0.37125451E-05 0.67650468E-07 0.17411306E-06 -0.41988993E-07 0.13490218E-05  
-0.14326217E-06 0.11025464E-05

cost efficiency estimates :

firm	year	eff.-est.	firm	year	eff.-est.
1	1	0.16143100E+01	42	1	0.26039025E+01
2	1	0.16377497E+01	43	1	0.27857842E+01
3	1	0.15319665E+01	44	1	0.15966879E+01
4	1	0.21201462E+01	45	1	0.17183631E+01
5	1	0.13020486E+01	46	1	0.15816583E+01
6	1	0.28756441E+01	47	1	0.18981757E+01
7	1	0.15824982E+01	48	1	0.13218035E+01
8	1	0.14703312E+01	49	1	0.22466081E+01
9	1	0.20941352E+01	50	1	0.17759056E+01
10	1	0.14906508E+01	51	1	0.21873025E+01
11	1	0.12744626E+01	52	1	0.22427419E+01
12	1	0.14413093E+01	53	1	0.18987465E+01
13	1	0.15974045E+01	54	1	0.15258129E+01
14	1	0.12374785E+01	55	1	0.17395960E+01
15	1	0.13447753E+01	56	1	0.11833629E+01
16	1	0.13549821E+01	57	1	0.15400327E+01
17	1	0.13222167E+01	58	1	0.10612991E+01
18	1	0.14030706E+01	59	1	0.18704181E+01
19	1	0.18260479E+01	60	1	0.16957775E+01
20	1	0.16456214E+01	61	1	0.11263557E+01
21	1	0.11726055E+01	62	1	0.14638653E+01
22	1	0.11356050E+01	63	1	0.13711432E+01
23	1	0.10001062E+01	64	1	0.12277184E+01
24	1	0.11065528E+01	65	1	0.16392817E+01
25	1	0.12698701E+01	66	1	0.15663580E+01
26	1	0.10404100E+01	67	1	0.19177863E+01
27	1	0.10283242E+01	68	1	0.26632658E+01
28	1	0.11502369E+01	69	1	0.15223340E+01
29	1	0.12496392E+01	70	1	0.19016449E+01
30	1	0.12881999E+01	71	1	0.15750357E+01
31	1	0.12991718E+01	72	1	0.13596431E+01
32	1	0.16372794E+01	73	1	0.10905019E+01
33	1	0.12396199E+01	74	1	0.13371523E+01
34	1	0.13608024E+01	75	1	0.11530108E+01
35	1	0.18763596E+01	76	1	0.19383911E+01
36	1	0.15707216E+01	77	1	0.13940144E+01
37	1	0.20784389E+01	78	1	0.18773159E+01
38	1	0.12786447E+01	79	1	0.20616384E+01
39	1	0.13734236E+01	80	1	0.15941324E+01
40	1	0.26537843E+01			
41	1	0.15177214E+01			

mean efficiency = 0.15968617E+01