

LAMPIRAN

Regresi Growth 1994 - 1997

```
. reg growth lnage lnworker lninput lnqi d_geo
```

Source	SS	df	MS	Number of obs = 349		
Model	58692.6866	5	11738.5373	F(5, 343) =	15.50	
Residual	259814.529	343	757.476762	Prob > F =	0.0000	
-----				R-squared =	0.1843	
-----				Adj R-squared =	0.1724	
Total	318507.216	348	915.25062	Root MSE =	27.522	

growth	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lnage	-1.660745	1.779199	-0.93	0.351	-5.160259	1.838768
lnworker	14.06857	2.455156	5.73	0.000	9.239514	18.89763
lninput	-13.18462	1.588699	-8.30	0.000	-16.30944	-10.0598
lnqi	-17.71012	4.014723	-4.41	0.000	-25.6067	-9.813548
d_geo	-2.219469	3.431351	-0.65	0.518	-8.968608	4.52967
_cons	224.0466	27.30362	8.21	0.000	170.343	277.7502

Uji multikolinearity

```
. corr lnage lnworker lninput lnqi d_geo  
(obs=349)
```

	lnage	lnworker	lninput	lnqi	d_geo
lnage	1.0000				
lnworker	0.1809	1.0000			
lninput	0.1770	0.6672	1.0000		
lnqi	-0.0714	-0.1673	-0.6190	1.0000	
d_geo	0.0274	-0.0113	-0.0760	-0.0784	1.0000

Uji heteroskedastisitas

```
. hettest
```

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity  
Ho: Constant variance  
Variables: fitted values of growth  
  
chi2(1) = 6.09  
Prob > chi2 = 0.0136
```

Regresi dengan command robust

```
. reg growth lnage lnworker lninput lnqi d_geo, robust
```

Regression with robust standard errors

Number of obs = 349
 F(5, 343) = 13.21
 Prob > F = 0.0000
 R-squared = 0.1843
 Root MSE = 27.522

growth	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
lnage	-1.660745	1.806329	-0.92	0.359	-5.21362	1.89213
lnworker	14.06857	2.423872	5.80	0.000	9.301048	18.8361
lninput	-13.18462	1.728791	-7.63	0.000	-16.58499	-9.784256
lnqi	-17.71012	3.809874	-4.65	0.000	-25.20378	-10.21647
d_geo	-2.219469	3.172516	-0.70	0.485	-8.459504	4.020566
_cons	224.0466	29.97687	7.47	0.000	165.085	283.0082

Regresi Growth 1999 – 2002

. reg growth lnage lnworker lninput lnqi d_geo

Source	SS	df	MS	Number of obs =	138
Model	446565.603	5	89313.1206	F(5, 132) =	23.45
Residual	502809.841	132	3809.16547	Prob > F =	0.0000
				R-squared =	0.4704
				Adj R-squared =	0.4503
Total	949375.444	137	6929.74777	Root MSE =	61.718

growth	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lnage	-12.61603	6.623748	-1.90	0.059	-25.71846	.4863994
lnworker	14.27991	8.080188	1.77	0.079	-1.703504	30.26332
lninput	-41.51392	5.539034	-7.49	0.000	-52.47068	-30.55717
lnqi	-43.72878	11.64346	-3.76	0.000	-66.7607	-20.69686
d_geo	-9.043979	11.09182	-0.82	0.416	-30.9847	12.89674
_cons	878.0947	97.2587	9.03	0.000	685.7073	1070.482

Uji multikolinearity

. corr lnage lnworker lninput lnqi d_geo
 (obs=138)

	lnage	lnworker	lninput	lnqi	d_geo
lnage	1.0000				
lnworker	0.0768	1.0000			
lninput	0.1064	0.6155	1.0000		
lnqi	-0.0342	-0.1683	-0.7157	1.0000	
d_geo	0.2225	0.1144	0.0641	-0.1202	1.0000

Uji heterokedastisitas

. hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
 Ho: Constant variance
 Variables: fitted values of growth

```
chi2(1)      =    13.72
Prob > chi2  =    0.0002
```

Regresi dengan command robust

```
. reg growth lnage lnworker lninput lnqi d_geo, robust
```

```
Regression with robust standard errors      Number of obs =    138
                                             F( 5, 132) =    26.55
                                             Prob > F      =    0.0000
                                             R-squared    =    0.4704
                                             Root MSE    =    61.718
```

growth	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
lnage	-12.61603	7.295493	-1.73	0.086	-27.04724	1.815177
lnworker	14.27991	6.238654	2.29	0.024	1.939233	26.62058
lninput	-41.51392	4.74139	-8.76	0.000	-50.89286	-32.13498
lnqi	-43.72878	11.08694	-3.94	0.000	-65.65984	-21.79773
d_geo	-9.043979	10.96422	-0.82	0.411	-30.73229	12.64433
_cons	878.0947	89.97583	9.76	0.000	700.1136	1056.076

Regresi Probit 1994 – 1997

```
. prob dummy age worker input q_i d_geo
```

```
Iteration 0: log likelihood = -348.35751
Iteration 1: log likelihood = -335.89576
Iteration 2: log likelihood = -335.3067
Iteration 3: log likelihood = -335.29729
Iteration 4: log likelihood = -335.29729
```

```
Probit estimates      Number of obs =    514
                      LR chi2(5) =    26.12
                      Prob > chi2 =    0.0001
Log likelihood = -335.29729      Pseudo R2 =    0.0375
```

dummy	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
age	.0030067	.0073091	0.41	0.681	-.0113188	.0173322
worker	.0044957	.0016961	2.65	0.008	.0011714	.0078201
input	-7.33e-12	8.28e-11	-0.09	0.929	-1.70e-10	1.55e-10
q_i	-.1391604	.048939	-2.84	0.004	-.235079	-.0432418
d_geo	-.0602385	.1409958	-0.43	0.669	-.3365853	.2161082
_cons	.3076346	.1912423	1.61	0.108	-.0671934	.6824627

Uji Goodness of Fit

```
. lstat
```

```
Probit model for dummy
```

Classified	True		Total
	D	~D	
+	280	179	459
-	22	33	55
Total	302	212	514

Classified + if predicted Pr(D) >= .5
 True D defined as dummy != 0

Sensitivity	Pr(+ D)	92.72%
Specificity	Pr(- ~D)	15.57%
Positive predictive value	Pr(D +)	61.00%
Negative predictive value	Pr(~D -)	60.00%
False + rate for true ~D	Pr(+ ~D)	84.43%
False - rate for true D	Pr(- D)	7.28%
False + rate for classified +	Pr(~D +)	39.00%
False - rate for classified -	Pr(D -)	40.00%
Correctly classified		60.89%

Nilai marjinal probit

```
. dprobit dummy age worker input q_i d_geo
```

```
Iteration 0: log likelihood = -348.35751
Iteration 1: log likelihood = -335.89576
Iteration 2: log likelihood = -335.3067
Iteration 3: log likelihood = -335.29729
Iteration 4: log likelihood = -335.29729
```

Probit estimates

Number of obs = 514
 LR chi2(5) = 26.12
 Prob > chi2 = 0.0001
 Pseudo R2 = 0.0375

Log likelihood = -335.29729

dummy	dF/dx	Std. Err.	z	P> z	x-bar	[95% C.I.]
age	.0011652	.0028324	0.41	0.681	8.21984	-.004386	.006717	
worker	.0017423	.0006542	2.65	0.008	55.0603	.00046	.003025	
input	-2.84e-12	3.21e-11	-0.09	0.929	5.7e+08	-6.6e-11	6.0e-11	
q_i	-.0539315	.0190013	-2.84	0.004	2.07011	-.091173	-.01669	
d_geo*	-.0232449	.0541548	-0.43	0.669	.77821	-.129386	.082897	
obs. P	.5875486							
pred. P	.5951151	(at x-bar)						

(*) dF/dx is for discrete change of dummy variable from 0 to 1
 z and P>|z| are the test of the underlying coefficient being 0

Regresi Probit 1999 – 2002

```
. probit dummy age worker input q_i d_geo
```

```
Iteration 0: log likelihood = -269.72691
Iteration 1: log likelihood = -245.33235
Iteration 2: log likelihood = -238.22931
Iteration 3: log likelihood = -235.69363
```

Iteration 4: log likelihood = -235.60757
 Iteration 5: log likelihood = -235.60742

Probit estimates Number of obs = 472
LR chi2(5) = 68.24
Prob > chi2 = 0.0000
Pseudo R2 = 0.1265
 Log likelihood = -235.60742

dummy	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
age	.0016953	.0051152	0.33	0.740	-.0083304	.011721
worker	.0080869	.0017571	4.60	0.000	.0046431	.0115308
input	2.57e-12	9.44e-12	0.27	0.785	-1.59e-11	2.11e-11
q_i	-.0999752	.0419169	-2.39	0.017	-.1821307	-.0178196
d_geo	-.4428631	.1354677	-3.27	0.001	-.7083749	-.1773512
_cons	-.6115162	.1719764	-3.56	0.000	-.9485838	-.2744486

note: 1 failure and 4 successes completely determined.

Uji Goodness of Fit

. lstat

Probit model for dummy

Classified	True		Total
	D	~D	
+	27	5	32
-	95	345	440
Total	122	350	472

Classified + if predicted Pr(D) >= .5
 True D defined as dummy != 0

Sensitivity	Pr(+ D)	22.13%
Specificity	Pr(- ~D)	98.57%
Positive predictive value	Pr(D +)	84.38%
Negative predictive value	Pr(~D -)	78.41%
False + rate for true ~D	Pr(+ ~D)	1.43%
False - rate for true D	Pr(- D)	77.87%
False + rate for classified +	Pr(~D +)	15.63%
False - rate for classified -	Pr(D -)	21.59%
Correctly classified		78.81%

Nilai marjinal probit

. dprobit dummy age worker input q_i d_geo

Iteration 0: log likelihood = -269.72691
 Iteration 1: log likelihood = -245.33235
 Iteration 2: log likelihood = -238.22931
 Iteration 3: log likelihood = -235.69363
 Iteration 4: log likelihood = -235.60757
 Iteration 5: log likelihood = -235.60742

Probit estimates

Number of obs = 472
LR chi2(5) = 68.24
Prob > chi2 = 0.0000
Pseudo R2 = 0.1265

Log likelihood = -235.60742

dummy	dF/dx	Std. Err.	z	P> z	x-bar	[95% C.I.]
age	.0005483	.001654	0.33	0.740	12.2585	-.002693	.00379	
worker	.0026153	.000612	4.60	0.000	57.4873	.001416	.003815	
input	8.33e-13	3.05e-12	0.27	0.785	1.8e+09	-5.2e-12	6.8e-12	
q_i	-.0323323	.0132102	-2.39	0.017	2.53792	-.058224	-.006441	
d_geo*	-.1471203	.0459144	-3.27	0.001	.616525	-.237111	-.05713	
obs. P	.2584746							
pred. P	.25851	(at x-bar)						

(*) dF/dx is for discrete change of dummy variable from 0 to 1
z and P>|z| are the test of the underlying coefficient being 0

