

APPENDICES

Appendices – I Augmented Dickey Fuller test during Post Liberalization Period (1992-2016)

(1) Cobb-Douglas production function results during Post-Liberalization Period

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begin with full model
p = 0.9299 >= 0.1000 removing ln_cfc
p = 0.8797 >= 0.1000 removing oc1
p = 0.1625 >= 0.1000 removing ln_mc
p = 0.3663 >= 0.1000 removing lnblc_1

```

Source	SS	df	MS	Number of obs =	23
Model	7.8047174	5	1.56094348	F(5, 17) =	11.32
Residual	2.3440705	17	.1378865	Prob > F =	0.0001
				R-squared =	0.7690
				Adj R-squared =	0.7011
Total	10.1487879	22	.461308541	Root MSE =	.37133

ln_gry	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lnflc_1	-1.190081	.3582885	-3.32	0.004	-1.946003	-.4341582
lnhlc_1	1.478406	.4112403	3.59	0.002	.6107649	2.346047
sc1	-.670404	.3436136	-1.95	0.068	-1.395365	.0545573
lnic	.2372375	.0622532	3.81	0.001	.1058947	.3685803
lnppc	.1855537	.0816683	2.27	0.036	.0132486	.3578587
_cons	7.720082	.5855697	13.18	0.000	6.484638	8.955526

(2) Gross returns

Dickey-Fuller test for unit root		Number of obs =		22
Test Statistic	1% Critical Value	Interpolated Dickey-Fuller 5% Critical Value	10% Critical Value	
z(t)	-5.793	-3.750	-3.000	-2.630
Mackinnon approximate p-value for z(t) = 0.0000				

(3) Family labour

. dfuller lnflc_1		Number of obs =		22
Dickey-Fuller test for unit root		Interpolated Dickey-Fuller		
Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value	
z(t)	-5.006	-3.750	-3.000	-2.630
Mackinnon approximate p-value for z(t) = 0.0000				

(4) Hired human labour

```
. dfuller lnhlc1
```

Dickey-Fuller test for unit root		Number of obs =		22
	Test Statistic	1% Critical value	Interpolated Dickey-Fuller 5% Critical value	10% Critical value
z(t)	-5.763	-3.750	-3.000	-2.630

Mackinnon approximate p-value for z(t) = **0.0000**

(5) Bullock labour

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. dfuller lnblc1
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Dickey-Fuller test for unit root		Number of obs =		22
	Test Statistic	1% Critical value	Interpolated Dickey-Fuller 5% Critical value	10% Critical value
z(t)	-7.794	-3.750	-3.000	-2.630

Mackinnon approximate p-value for z(t) = **0.0000**

(6) Chemical fertilizers

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. dfuller ln_cfc
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Dickey-Fuller test for unit root		Number of obs =		22
	Test Statistic	1% Critical value	Interpolated Dickey-Fuller 5% Critical value	10% Critical value
z(t)	-5.348	-3.750	-3.000	-2.630

Mackinnon approximate p-value for z(t) = **0.0000**

(7) Manures

```
. dfuller ln_mc
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Dickey-Fuller test for unit root		Number of obs =		22
	Test Statistic	1% Critical value	Interpolated Dickey-Fuller 5% Critical value	10% Critical value
z(t)	-6.128	-3.750	-3.000	-2.630

Mackinnon approximate p-value for z(t) = **0.0000**

(8) Seeds

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. dfuller sc1
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Dickey-Fuller test for unit root		Number of obs =		22
	Test Statistic	1% Critical Value	Interpolated Dickey-Fuller 5% Critical Value	10% Critical Value
z(t)	-5.736	-3.750	-3.000	-2.630

Mackinnon approximate p-value for z(t) = 0.0000

(9) Plant protection chemicals

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. dfuller lnppc
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Dickey-Fuller test for unit root		Number of obs =		23
	Test Statistic	1% Critical Value	Interpolated Dickey-Fuller 5% Critical Value	10% Critical Value
z(t)	-3.103	-3.750	-3.000	-2.630

Mackinnon approximate p-value for z(t) = 0.0263

(10) Irrigation

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. dfuller lnrc
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Dickey-Fuller test for unit root		Number of obs =		23
	Test Statistic	1% Critical Value	Interpolated Dickey-Fuller 5% Critical Value	10% Critical Value
z(t)	-3.372	-3.750	-3.000	-2.630

Mackinnon approximate p-value for z(t) = 0.0119

Appendices – II Augmented Dickey Fuller test during Overall Period (1980-2016)

(11) Cobb-Douglas production function results during Overall Period

```

begin with full model
p = 0.9017 >= 0.1000 removing lnofflc_1
p = 0.5018 >= 0.1000 removing lnofc_1fc_1
p = 0.2377 >= 0.1000 removing lnofppc_1
p = 0.1783 >= 0.1000 removing lnofsc_1
p = 0.2406 >= 0.1000 removing lnofoc_1

```

Source	SS	df	MS	Number of obs =	35
Model	6.49044766	4	1.62261192	F(4, 30) =	9.55
Residual	5.09707683	30	.169902561	Prob > F =	0.0000
				R-squared =	0.5601
				Adj R-squared =	0.5015
Total	11.5875245	34	.340809544	Root MSE =	.41219

lnofgr_1	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lnofic_1	-.0937602	.0499425	-1.88	0.070	-.1957565	.0082361
lnofhlc_1	.5934946	.1349814	4.40	0.000	.3178258	.8691633
lnofblc_1	-.7549402	.2297869	-3.29	0.003	-1.224228	-.2856527
lnofmc_1	.7015167	.2995586	2.34	0.026	.0897364	1.313297
_cons	.0345851	.0702494	0.49	0.626	-.1088832	.1780535

Source	SS	df	MS	Number of obs =	35
Model	7.35158276	9	.816842529	F(9, 25) =	4.82
Residual	4.23594173	25	.169437669	Prob > F =	0.0009
				R-squared =	0.6344
				Adj R-squared =	0.5028
Total	11.5875245	34	.340809544	Root MSE =	.41163

lnofgr_1	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lnofflc_1	.0552332	.4425164	0.12	0.902	-.8561464	.9666129
lnofhlc_1	.5547606	.3585418	1.55	0.134	-.1836701	1.293191
lnofblc_1	-.8339327	.3014085	-2.77	0.010	-1.454695	-.2131702
lnofsc_1	.7138999	.4050712	1.76	0.090	-.1203599	1.54816
lnofc_1fc_1	-.2184766	.3214018	-0.68	0.503	-.8804159	.4434628
lnofmc_1	.7551107	.354536	2.13	0.043	.0249301	1.485291
lnofppc_1	-.1040381	.0956623	-1.09	0.287	-.3010583	.0929821
lnofic_1	-.1216993	.0625957	-1.94	0.063	-.2506176	.0072189
lnofoc_1	-.2063643	.2161573	-0.95	0.349	-.6515487	.2388201
_cons	.0368066	.0714936	0.51	0.611	-.1104373	.1840505

(12) Gross returns

. dfuller lnofgr_1				
Dickey-Fuller test for unit root				Number of obs = 34
Test statistic	Interpolated Dickey-Fuller	1% Critical value	5% Critical value	10% Critical value
z(t)	-7.053	-3.689	-2.975	-2.619
Mackinnon approximate p-value for z(t) = 0.0000				

(17) Manures

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. dfuller    lnofmc_1
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Dickey-Fuller test for unit root		Number of obs =		34
	Test Statistic	1% Critical Value	Interpolated Dickey-Fuller 5% Critical Value	10% Critical Value
z(t)	-7.358	-3.689	-2.975	-2.619

Mackinnon approximate p-value for z(t) = 0.0000

(18) Plant protection chemicals

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. dfuller    lnofppc_1
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Dickey-Fuller test for unit root		Number of obs =		34
	Test Statistic	1% Critical Value	Interpolated Dickey-Fuller 5% Critical Value	10% Critical Value
z(t)	-8.193	-3.689	-2.975	-2.619

Mackinnon approximate p-value for z(t) = 0.0000

(19) Irrigation

```
. dfuller    lnofic_1
```

Dickey-Fuller test for unit root		Number of obs =		34
	Test Statistic	1% Critical Value	Interpolated Dickey-Fuller 5% Critical Value	10% Critical Value
z(t)	-9.431	-3.689	-2.975	-2.619

Mackinnon approximate p-value for z(t) = 0.0000

(20) Other expenses

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. dfuller    lnofoc_1
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Dickey-Fuller test for unit root		Number of obs =		34
	Test Statistic	1% Critical Value	Interpolated Dickey-Fuller 5% Critical Value	10% Critical Value
z(t)	-8.284	-3.689	-2.975	-2.619

Mackinnon approximate p-value for z(t) = 0.0000

(21) Stepwise regression and backward estimation results during Post-Liberalization Period

Appendices-III Summary statistics of Cobb-Douglas production function for groundnut cultivation in Gujarat state during Post-Liberalization Period

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.973 ^a	.947	.913	8348.647
2	.973 ^b	.947	.919	8066.213
3	.973 ^c	.947	.924	7814.008
4	.973 ^d	.947	.928	7600.293
5	.973 ^e	.947	.932	7408.856
6	.973 ^f	.946	.934	7260.325

Note: a. Predictors: (Constant), OC, IC, BLC, PPC, CFC, FLC, MC, SC, HLC

b. Predictors: (Constant), OC, BLC, PPC, CFC, FLC, MC, SC, HLC

c. Predictors: (Constant), BLC, PPC, CFC, FLC, MC, SC, HLC

d. Predictors: (Constant), PPC, CFC, FLC, MC, SC, HLC

e. Predictors: (Constant), PPC, FLC, MC, SC, HLC

f. Predictors: (Constant), PPC, FLC, MC, HLC

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	5253.223	5548.418		.947	.360
FLC	6.695	4.040	.540	1.657	.120
HLC	5.406	4.403	.492	1.228	.240
BLC	-.864	2.973	-.065	-.291	.776
SC	1.713	3.055	.184	.561	.584
CFC	-2.664	8.159	-.073	-.327	.749
MC	-8.544	10.310	-.290	-.829	.421
PPC	6.762	4.627	.140	1.462	.166
IC	-.052	1.092	-.006	-.048	.963
OC	.240	2.726	.017	.088	.931

2	(Constant)	5181.004	5156.803		1.005	.331
	FLC	6.658	3.829	.537	1.739	.103
	HLC	5.357	4.138	.488	1.295	.215
	BLC	-.873	2.866	-.066	-.305	.765
	SC	1.648	2.642	.177	.624	.542
	CFC	-2.542	7.483	-.069	-.340	.739
	MC	-8.351	9.160	-.283	-.912	.376
	PPC	6.764	4.470	.140	1.513	.151
	OC	.294	2.393	.020	.123	.904
3	(Constant)	4986.776	4755.182		1.049	.310
	FLC	6.349	2.797	.512	2.270	.037
	HLC	5.700	2.961	.519	1.925	.072
	BLC	-.722	2.510	-.055	-.288	.777
	SC	1.563	2.469	.168	.633	.536
	CFC	-2.016	5.950	-.055	-.339	.739
	MC	-8.357	8.874	-.283	-.942	.360
	PPC	6.798	4.322	.141	1.573	.135
4	(Constant)	5370.819	4439.231		1.210	.243
	FLC	6.469	2.689	.521	2.405	.028
	HLC	6.231	2.252	.568	2.768	.013
	SC	1.257	2.168	.135	.580	.570
	CFC	-1.865	5.765	-.051	-.323	.750
	MC	-10.500	4.689	-.356	-2.239	.039
	PPC	6.947	4.174	.144	1.664	.114
5	(Constant)	4698.625	3824.085		1.229	.235
	FLC	6.154	2.444	.496	2.518	.021
	HLC	6.105	2.162	.556	2.824	.011
	SC	.914	1.844	.098	.496	.626
	MC	-9.404	3.160	-.319	-2.976	.008
	PPC	6.784	4.039	.140	1.680	.110
6	(Constant)	5627.776	3266.585		1.723	.101
	FLC	6.736	2.102	.543	3.205	.005
	HLC	6.585	1.894	.600	3.477	.003
	MC	-9.418	3.097	-.319	-3.041	.007

	PPC	7.177	3.881	.148	1.849	.080
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Note: a. Dependent Variable: GR (Y)

(22) Stepwise regression and backward estimation results during Overall Period

Appendices- IV Summary statistics of Cobb-Douglas production function for Groundnut cultivation in Gujarat state during Overall Period

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.983 ^a	.966	.954	6323.430
2	.983 ^b	.966	.956	6208.042
3	.983 ^c	.966	.958	6098.253
4	.983 ^d	.966	.959	6002.457
5	.983 ^e	.965	.960	5950.067
6	.982 ^f	.964	.960	5949.072

Note: a. Predictors: (Constant), OC, IC, BLC, PPC, CFC, HLC, MC, SC, FLC

b. Predictors: (Constant), OC, BLC, PPC, CFC, HLC, MC, SC, FLC

c. Predictors: (Constant), BLC, PPC, CFC, HLC, MC, SC, FLC

d. Predictors: (Constant), BLC, PPC, HLC, MC, SC, FLC

e. Predictors: (Constant), PPC, HLC, MC, SC, FLC

f. Predictors: (Constant), PPC, HLC, MC, FLC

Coefficients^a

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2624.852	2774.228		.946	.353
	FLC	6.377	2.996	.536	2.128	.043
	HLC	4.346	3.102	.381	1.401	.173
	BLC	-1.410	2.059	-.102	-.685	.500
	SC	2.036	2.189	.228	.930	.361
	CFC	-1.614	5.797	-.043	-.278	.783
	MC	-5.508	6.657	-.187	-.827	.416
	PPC	6.554	3.463	.124	1.893	.070
	IC	.119	.773	.012	.154	.879
	OC	.376	2.036	.023	.185	.855
2	(Constant)	2664.853	2711.590		.983	.334
	FLC	6.463	2.890	.544	2.237	.034
	HLC	4.420	3.009	.388	1.469	.153
	BLC	-1.404	2.021	-.102	-.695	.493
	SC	2.183	1.933	.245	1.130	.269
	CFC	-1.814	5.545	-.049	-.327	.746
	MC	-5.834	6.194	-.198	-.942	.355
	PPC	6.553	3.400	.124	1.927	.065
	OC	.247	1.822	.015	.136	.893
3	(Constant)	2526.816	2468.914		1.023	.315
	FLC	6.199	2.100	.521	2.951	.006
	HLC	4.709	2.084	.413	2.260	.032
	BLC	-1.283	1.781	-.093	-.720	.477
	SC	2.112	1.828	.237	1.155	.258
	CFC	-1.383	4.463	-.037	-.310	.759
	MC	-5.830	6.085	-.197	-.958	.346
	PPC	6.579	3.334	.124	1.973	.058
4	(Constant)	2183.543	2171.851		1.005	.323
	FLC	5.955	1.916	.501	3.107	.004
	HLC	4.710	2.051	.413	2.296	.029

	BLC	-1.198	1.732	-.087	-.692	.495
	SC	1.821	1.544	.204	1.180	.248
	MC	-5.307	5.755	-.180	-.922	.364
	PPC	6.462	3.261	.122	1.982	.057
5	(Constant)	2897.651	1894.193		1.530	.137
	FLC	6.138	1.881	.516	3.263	.003
	HLC	5.572	1.615	.489	3.449	.002
	SC	1.397	1.404	.157	.995	.328
	MC	-8.888	2.492	-.301	-3.567	.001
	PPC	6.684	3.217	.126	2.078	.046
6	(Constant)	3832.574	1644.332		2.331	.026
	FLC	7.159	1.577	.602	4.541	.000
	HLC	6.219	1.478	.545	4.207	.000
	MC	-8.840	2.491	-.299	-3.549	.001
	PPC	7.375	3.140	.139	2.349	.025

Note: a. Dependent Variable: GR (Y)