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Econometric Analyses - Global Climate Change [Binder] [2]

Stack:	Row:	Section:	Shelf:	Position:
S	21	5	1	3

Statistics/Data Analysis

```
1. set more 1;

2. gen annex1 = counindx == 54| counindx == 67| counindx == 72| counindx == 95|
 > counindx == 116| counindx == 117| counindx == 118| counindx == 120| counindx
 > == 121|
 > counindx == 122| counindx == 123| counindx == 124| counindx == 125| counindx
 > == 126|
 > counindx == 127| counindx == 128| counindx == 129| counindx == 130| counindx
 > == 131|
 > counindx == 133| counindx == 134| counindx == 135| counindx == 136| counindx
 > == 137|
 > counindx == 138| counindx == 139| counindx == 140| counindx == 142| counindx
 > == 143|
 > counindx == 144| counindx == 145| counindx == 147;

3. generate lgdp15 = ln(gdp_ppp[_n-5]);
(1501 missing values generated)

4. generate lgdp16 = ln(gdp_ppp[_n-6]);
(1502 missing values generated)

5. generate lpop15 = ln(pop[_n-5]);
(1466 missing values generated)

6. generate dev = popgdp[_n+20] if time==1;
(6403 missing values generated)

7. replace dev = popgdp[_n+19] if time==2;
(133 real changes made)

8. replace dev = popgdp[_n+18] if time==3;
(133 real changes made)

9. replace dev = popgdp[_n+17] if time==4;
(133 real changes made)

10. replace dev = popgdp[_n+16] if time==5;
(133 real changes made)

11. replace dev = popgdp[_n+15] if time==6;
(133 real changes made)

12. replace dev = popgdp[_n+14] if time==7;
(133 real changes made)

13. replace dev = popgdp[_n+13] if time==8;
(133 real changes made)

14. replace dev = popgdp[_n+12] if time==9;
(133 real changes made)

15. replace dev = popgdp[_n+11] if time==10;
```

(133 real changes made)

16. **replace dev = popgdp[_n+10] if time==11;**
(133 real changes made)

17. **replace dev = popgdp[_n+9] if time==12;**
(133 real changes made)

18. **replace dev = popgdp[_n+8] if time==13;**
(133 real changes made)

19. **replace dev = popgdp[_n+7] if time==14;**
(133 real changes made)

20. **replace dev = popgdp[_n+6] if time==15;**
(133 real changes made)

21. **replace dev = popgdp[_n+5] if time==16;**
(133 real changes made)

22. **replace dev = popgdp[_n+4] if time==17;**
(133 real changes made)

23. **replace dev = popgdp[_n+3] if time==18;**
(133 real changes made)

24. **replace dev = popgdp[_n+2] if time==19;**
(133 real changes made)

25. **replace dev = popgdp[_n+1] if time==20;**
(133 real changes made)

26. **replace dev = popgdp if time==21;**
(133 real changes made)

27. **replace dev = popgdp[_n-1] if time==22;**
(133 real changes made)

28. **replace dev = popgdp[_n-2] if time==23;**
(133 real changes made)

29. **replace dev = popgdp[_n-3] if time==24;**
(133 real changes made)

30. **replace dev = popgdp[_n-4] if time==25;**
(133 real changes made)

31. **replace dev = popgdp[_n-5] if time==26;**
(133 real changes made)

32. **replace dev = popgdp[_n-6] if time==27;**
(133 real changes made)

33. **replace dev = popgdp[_n-7] if time==28;**

(133 real changes made)

34. replace dev = popgdp[_n-8] if time==29;
(133 real changes made)

35. replace dev = popgdp[_n-9] if time==30;
(133 real changes made)

36. replace dev = popgdp[_n-10] if time==31;
(133 real changes made)

37. replace dev = popgdp[_n-11] if time==32;
(133 real changes made)

38. replace dev = popgdp[_n-12] if time==33;
(133 real changes made)

39. replace dev = popgdp[_n-13] if time==34;
(133 real changes made)

40. replace dev = popgdp[_n-14] if time==35;
(133 real changes made)

41. replace dev = popgdp[_n-15] if time==36;
(133 real changes made)

42. replace dev = popgdp[_n-16] if time==37;
(133 real changes made)

43. replace dev = popgdp[_n-17] if time==38;
(133 real changes made)

44. replace dev = popgdp[_n-18] if time==39;
(133 real changes made)

45. replace dev = popgdp[_n-19] if time==40;
(133 real changes made)

46. replace dev = popgdp[_n-20] if time==41;
(133 real changes made)

47. replace dev = popgdp[_n-21] if time==42;
(133 real changes made)

48. replace dev = popgdp[_n-22] if time==43;
(133 real changes made)

49. generate dev2 = popgdp[_n+30] if time==1;
(6394 missing values generated)

50. replace dev2 = popgdp[_n+29] if time==2;
(142 real changes made)

51. replace dev2 = popgdp[_n+28] if time==3;

(142 real changes made)

52. **replace dev2 = popgdp[_n+27] if time==4;**
(142 real changes made)

53. **replace dev2 = popgdp[_n+26] if time==5;**
(142 real changes made)

54. **replace dev2 = popgdp[_n+25] if time==6;**
(142 real changes made)

55. **replace dev2 = popgdp[_n+24] if time==7;**
(142 real changes made)

56. **replace dev2 = popgdp[_n+23] if time==8;**
(142 real changes made)

57. **replace dev2 = popgdp[_n+22] if time==9;**
(142 real changes made)

58. **replace dev2 = popgdp[_n+21] if time==10;**
(142 real changes made)

59. **replace dev2 = popgdp[_n+20] if time==11;**
(142 real changes made)

60. **replace dev2 = popgdp[_n+19] if time==12;**
(142 real changes made)

61. **replace dev2 = popgdp[_n+18] if time==13;**
(142 real changes made)

62. **replace dev2 = popgdp[_n+17] if time==14;**
(142 real changes made)

63. **replace dev2 = popgdp[_n+16] if time==15;**
(142 real changes made)

64. **replace dev2 = popgdp[_n+15] if time==16;**
(142 real changes made)

65. **replace dev2 = popgdp[_n+14] if time==17;**
(142 real changes made)

66. **replace dev2 = popgdp[_n+13] if time==18;**
(142 real changes made)

67. **replace dev2 = popgdp[_n+12] if time==19;**
(142 real changes made)

68. **replace dev2 = popgdp[_n+11] if time==20;**
(142 real changes made)

69. **replace dev2 = popgdp[_n+10] if time==21;**

(142 real changes made)

```
70. replace dev2 = popgdp[_n+9] if time==22;
(142 real changes made)

71. replace dev2 = popgdp[_n+8] if time==23;
(142 real changes made)

72. replace dev2 = popgdp[_n+7] if time==24;
(142 real changes made)

73. replace dev2 = popgdp[_n+6] if time==25;
(142 real changes made)

74. replace dev2 = popgdp[_n+5] if time==26;
(142 real changes made)

75. replace dev2 = popgdp[_n+4] if time==27;
(142 real changes made)

76. replace dev2 = popgdp[_n+3] if time==28;
(142 real changes made)

77. replace dev2 = popgdp[_n+2] if time==29;
(142 real changes made)

78. replace dev2 = popgdp[_n+1] if time==30;
(142 real changes made)

79. replace dev2 = popgdp if time==31;
(142 real changes made)

80. replace dev2 = popgdp[_n-1] if time==32;
(142 real changes made)

81. replace dev2 = popgdp[_n-2] if time==33;
(142 real changes made)

82. replace dev2 = popgdp[_n-3] if time==34;
(142 real changes made)

83. replace dev2 = popgdp[_n-4] if time==35;
(142 real changes made)

84. replace dev2 = popgdp[_n-5] if time==36;
(142 real changes made)

85. replace dev2 = popgdp[_n-6] if time==37;
(142 real changes made)

86. replace dev2 = popgdp[_n-7] if time==38;
(142 real changes made)

87. replace dev2 = popgdp[_n-8] if time==39;
```

142 real changes made)

88. **replace dev2 = popgdp[_n-9] if time==40;**
(142 real changes made)

89. **replace dev2 = popgdp[_n-10] if time==41;**
(142 real changes made)

90. **replace dev2 = popgdp[_n-11] if time==42;**
(142 real changes made)

91. **replace dev2 = popgdp[_n-12] if time==43;**
(142 real changes made)

92. **gen devdum = dev >= 4000;**

93. **gen devduma = dev2 >=1610;**

94. **gen devdumb = dev2 >=4500;**

95. **gen afrdum = counindx<=50;**

96. **gen afrdum2 = afrdum*lgdpl5;**
(1501 missing values generated)

97. **gen namdum = counindx<=72;**

98. **replace namdum = 0 if counindx<=50;**
(2149 real changes made)

99. **gen namdum2 = namdum*lgdpl5;**
(1501 missing values generated)

100. **gen samdum = counindx<=84;**

101. **replace samdum = 0 if counindx<=72;**
(3095 real changes made)

102. **gen samdum2 = samdum*lgdpl5;**
(1501 missing values generated)

103. **gen asiadum = counindx<=115;**

104. **replace asiadum = 0 if counindx<=84;**
(3611 real changes made)

105. **gen asiadum2 = asiadum*lgdpl5;**
(1501 missing values generated)

106. **gen eurodum = counindx<=144;**

107. **replace eurodum = 0 if counindx<=115;**
(4944 real changes made)

```
108. gen eurodum2 = eurodum*lgdpl5;
(1501 missing values generated)

109. gen ausdum = counindx<=152;

110. replace ausdum = 0 if counindx<=144;
(6191 real changes made)

111. gen ausdum2 = ausdum*lgdpl5;
(1501 missing values generated)

112. gen inv = (invest/100);
(1496 missing values generated)

113. generate la5emis = ln((totalcd + totalcd[_n-1] + totalcd[_n-2] + totalcd[_n-3
  > ] +
  > totalcd[_n-4])/5000);
(544 missing values generated)

114. gen devdum2 = (devdum*lgdpl5);
(1501 missing values generated)

115. gen devdum3a = (devduma*lgdpl5);
(1501 missing values generated)

116. gen devdum3b = (devdumb*lgdpl5);
(1501 missing values generated)

117. generate timesq = time*time;

118. gen trend = time;

119. gen trend2 = (trend*lgdpl5);
(1501 missing values generated)

120. drop if counindx==23;
(43 observations deleted)

121. drop if counindx==32;
(43 observations deleted)

122. drop if counindx==59;
(43 observations deleted)

123. drop if counindx==68;
(43 observations deleted)

124. drop if counindx==99;
(43 observations deleted)

125. drop if counindx==101;
(43 observations deleted)

126. drop if counindx==151;
```

(43 observations deleted)

```
127. drop if time==42;
(145 observations deleted)

128. drop if time==41;
(145 observations deleted)

129. drop if time==40;
(145 observations deleted)

130. drop if time==39;
(145 observations deleted)

131. drop if time==37;
(145 observations deleted)

132. drop if time==36;
(145 observations deleted)

133. drop if time==35;
(145 observations deleted)

134. drop if time==34;
(145 observations deleted)

135. drop if time==32;
(145 observations deleted)

136. drop if time==31;
(145 observations deleted)

137. drop if time==30;
(145 observations deleted)

138. drop if time==29;
(145 observations deleted)

139. drop if time==27;
(145 observations deleted)

140. drop if time==26;
(145 observations deleted)

141. drop if time==25;
(145 observations deleted)

142. drop if time==24;
(145 observations deleted)

143. drop if time==22;
(145 observations deleted)

144. drop if time==21;
```

(145 observations deleted)

```
145. drop if time==20;
```
(145 observations deleted)

```
146. drop if time==19;
```
(145 observations deleted)

```
147. drop if time==17;
```
(145 observations deleted)

```
148. drop if time==16;
```
(145 observations deleted)

```
149. drop if time==15;
```
(145 observations deleted)

```
150. drop if time==14;
```
(145 observations deleted)

```
151. drop if time==12;
```
(145 observations deleted)

```
152. drop if time==11;
```
(145 observations deleted)

```
153. drop if time==10;
```
(145 observations deleted)

```
154. drop if time==9;
```
(145 observations deleted)

```
155. drop if time==7;
```
(145 observations deleted)

```
156. drop if time==6;
```
(145 observations deleted)

```
157. drop if time==5;
```
(145 observations deleted)

```
158. drop if time==4;
```
(145 observations deleted)

```
159. drop if time==3;
```
(145 observations deleted)

```
160. drop if time==2;
```
(145 observations deleted)

```
161. drop if time==1;
```
(144 observations deleted)

```
162. set matsize 300;
```

```
163. generate time2=1 if time==8;
(1015 missing values generated)

164. replace time2=2 if time==13;
(145 real changes made)

165. replace time2=3 if time==18;
(145 real changes made)

166. replace time2=4 if time==23;
(145 real changes made)

167. replace time2=5 if time==28;
(145 real changes made)

168. replace time2=6 if time==33;
(145 real changes made)

169. replace time2=7 if time==38;
(145 real changes made)

170. replace time2=8 if time==43;
(145 real changes made)

171. generate time2sq = time2*time2;

172. tab counindx, generate(count);
```

counindx	Freq.	Percent	Cum.
1	8	0.69	0.69
2	8	0.69	1.38
3	8	0.69	2.07
4	8	0.69	2.76
5	8	0.69	3.45
6	8	0.69	4.14
7	8	0.69	4.83
8	8	0.69	5.52
9	8	0.69	6.21
10	8	0.69	6.90
11	8	0.69	7.59
12	8	0.69	8.28
13	8	0.69	8.97
14	8	0.69	9.66
15	8	0.69	10.34
16	8	0.69	11.03
17	8	0.69	11.72
18	8	0.69	12.41
19	8	0.69	13.10
20	8	0.69	13.79
21	8	0.69	14.48
22	8	0.69	15.17
24	8	0.69	15.86

25	8	0.69	16.55
26	8	0.69	17.24
27	8	0.69	17.93
28	8	0.69	18.62
29	8	0.69	19.31
30	8	0.69	20.00
31	8	0.69	20.69
33	8	0.69	21.38
34	8	0.69	22.07
35	8	0.69	22.76
36	8	0.69	23.45
37	8	0.69	24.14
38	8	0.69	24.83
39	8	0.69	25.52
40	8	0.69	26.21
41	8	0.69	26.90
42	8	0.69	27.59
43	8	0.69	28.28
44	8	0.69	28.97
45	8	0.69	29.66
46	8	0.69	30.34
47	8	0.69	31.03
48	8	0.69	31.72
49	8	0.69	32.41
50	8	0.69	33.10
51	8	0.69	33.79
52	8	0.69	34.48
53	8	0.69	35.17
54	8	0.69	35.86
55	8	0.69	36.55
56	8	0.69	37.24
57	8	0.69	37.93
58	8	0.69	38.62
60	8	0.69	39.31
61	8	0.69	40.00
62	8	0.69	40.69
63	8	0.69	41.38
64	8	0.69	42.07
65	8	0.69	42.76
66	8	0.69	43.45
67	8	0.69	44.14
69	8	0.69	44.83
70	8	0.69	45.52
71	8	0.69	46.21
72	8	0.69	46.90
73	8	0.69	47.59
74	8	0.69	48.28
75	8	0.69	48.97
76	8	0.69	49.66
77	8	0.69	50.34
78	8	0.69	51.03
79	8	0.69	51.72
80	8	0.69	52.41
81	8	0.69	53.10

82	8	0.69	53.79
83	8	0.69	54.48
84	8	0.69	55.17
85	8	0.69	55.86
86	8	0.69	56.55
87	8	0.69	57.24
88	8	0.69	57.93
89	8	0.69	58.62
90	8	0.69	59.31
91	8	0.69	60.00
92	8	0.69	60.69
93	8	0.69	61.38
94	8	0.69	62.07
95	8	0.69	62.76
96	8	0.69	63.45
97	8	0.69	64.14
98	8	0.69	64.83
100	8	0.69	65.52
102	8	0.69	66.21
103	8	0.69	66.90
104	8	0.69	67.59
105	8	0.69	68.28
106	8	0.69	68.97
107	8	0.69	69.66
108	8	0.69	70.34
109	8	0.69	71.03
110	8	0.69	71.72
111	8	0.69	72.41
112	8	0.69	73.10
113	8	0.69	73.79
114	8	0.69	74.48
115	8	0.69	75.17
116	8	0.69	75.86
117	8	0.69	76.55
118	8	0.69	77.24
119	8	0.69	77.93
120	8	0.69	78.62
121	8	0.69	79.31
122	8	0.69	80.00
123	8	0.69	80.69
124	8	0.69	81.38
125	8	0.69	82.07
126	8	0.69	82.76
127	8	0.69	83.45
128	8	0.69	84.14
129	8	0.69	84.83
130	8	0.69	85.52
131	8	0.69	86.21
132	8	0.69	86.90
133	8	0.69	87.59
134	8	0.69	88.28
135	8	0.69	88.97
136	8	0.69	89.66
137	8	0.69	90.34

138	8	0.69	91.03
139	8	0.69	91.72
140	8	0.69	92.41
141	8	0.69	93.10
142	8	0.69	93.79
143	8	0.69	94.48
144	8	0.69	95.17
145	8	0.69	95.86
146	8	0.69	96.55
147	8	0.69	97.24
148	8	0.69	97.93
149	8	0.69	98.62
150	8	0.69	99.31
152	8	0.69	100.00
Total	1160	100.00	

```
173. xtreg la5emis lgdpl5 lgdpl6 lpopl5 inv devdum3a devdum3b time if time<=42, fe
  > i(counindx);
```

Fixed-effects (within) regression

sd(u_counindx)	=	1.792735	Number of obs = 767
sd(e_counindx_t)	=	.2662429	n = 140
sd(e_counindx_t + u_counindx)	=	1.812397	T-bar = 5.47857
corr(u_counindx, Xb)	=	-0.3312	R-sq within = 0.8091
			between = 0.5599
			overall = 0.5765
			F(7, 620) = 375.38
			Prob > F = 0.0000

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	1.08845	.1902956	5.720	0.000	.7147477	1.462152
lgdpl6	-.1778718	.1929159	-0.922	0.357	-.5567196	.2009759
lpopl5	.6235581	.1351	4.616	0.000	.358249	.8888672
inv	1.842583	.2426399	7.594	0.000	1.366087	2.319078
devdum3a	-.0499726	.0644543	-0.775	0.438	-.1765479	.0766026
devdum3b	-.1541251	.0553373	-2.785	0.006	-.2627963	-.0454539
time	.0023404	.0035679	0.656	0.512	-.0046662	.009347
_cons	-12.89394	1.101179	-11.709	0.000	-15.05644	-10.73145
counindx	F(139,620) =	29.061	0.000	(140 categories)		

```
174. regress la5emis lgdpl5 lgdpl6 lpopl5 inv devdum3a devdum3b time count* if ti
  > me<=42,
  > noconstant;
```

Source	SS	df	MS		
Model	5192.29275	147	35.3217194	Number of obs =	767
Residual	43.9488702	620	.070885274	F(147, 620) =	498.29
				Prob > F =	0.0000
				R-squared =	0.9916

Total	5236.24162	767	6.82691215

Adj R-squared = 0.9896
Root MSE = .26624

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	1.088449	.1902955	5.720	0.000	.7147472	1.462151
lgdpl6	-.1778716	.1929159	-0.922	0.357	-.5567193	.2009761
lpopl5	.6235582	.1351	4.616	0.000	.3582491	.8888673
inv	1.842583	.2426399	7.594	0.000	1.366087	2.319079
devdum3a	-.0499725	.0644543	-0.775	0.438	-.1765478	.0766027
devdum3b	-.1541251	.0553373	-2.785	0.006	-.2627963	-.0454539
time	.0023404	.0035679	0.656	0.512	-.0046662	.009347
count1	-13.28023	1.140847	-11.641	0.000	-15.52063	-11.03984
count2	-13.54281	1.087732	-12.450	0.000	-15.67889	-11.40672
count3	-14.93666	.9850285	-15.164	0.000	-16.87106	-13.00227
count4	-12.22517	.768906	-15.899	0.000	-13.73514	-10.71519
count5	-15.57644	1.061245	-14.678	0.000	-17.66051	-13.49237
count6	-15.87941	.9982068	-15.908	0.000	-17.83969	-13.91913
count7	-14.71858	1.099758	-13.383	0.000	-16.87829	-12.55888
count8	-12.77391	.6569957	-19.443	0.000	-14.06412	-11.48371
count9	-14.81911	.9285271	-15.960	0.000	-16.64255	-12.99567
count10	-15.45441	1.014346	-15.236	0.000	-17.44638	-13.46244
count11	-13.44362	.6672853	-20.147	0.000	-14.75403	-12.1332
count12	-13.00866	.837679	-15.529	0.000	-14.65369	-11.36363
count13	-11.89922	.6742611	-17.648	0.000	-13.22334	-10.57511
count14	-13.52909	1.244633	-10.870	0.000	-15.9733	-11.08488
count15	-16.0801	1.265306	-12.708	0.000	-18.56491	-13.5953
count16	-10.2939	.9354847	-11.004	0.000	-12.131	-8.456798
count17	-13.2896	.75142	-17.686	0.000	-14.76524	-11.81397
count18	-14.45836	1.133173	-12.759	0.000	-16.68368	-12.23304
count19	-14.03377	1.026201	-13.675	0.000	-16.04902	-12.01852
count20	-13.51708	.771839	-17.513	0.000	-15.03282	-12.00135
count21	-13.82874	1.028445	-13.446	0.000	-15.84839	-11.80908
count22	-14.39864	1.161764	-12.394	0.000	-16.68011	-12.11717
count23	-12.42853	.8940414	-13.902	0.000	-14.18425	-10.67281
count24	-15.098	1.109124	-13.613	0.000	-17.2761	-12.91991
count25	-14.66455	1.041721	-14.077	0.000	-16.71028	-12.61883
count26	-15.27183	1.055822	-14.464	0.000	-17.34525	-13.19841
count27	-13.35456	.8745993	-15.269	0.000	-15.0721	-11.63703
count28	-13.26881	.7868747	-16.863	0.000	-14.81408	-11.72355
count29	-13.87969	1.14786	-12.092	0.000	-16.13385	-11.62552
count30	-14.87137	1.157639	-12.846	0.000	-17.14474	-12.59801
count31	-15.15162	1.034181	-14.651	0.000	-17.18254	-13.1207
count32	-15.17944	1.378437	-11.012	0.000	-17.88641	-12.47246
count33	-12.33529	.7044326	-17.511	0.000	-13.71865	-10.95193
count34	-15.84628	1.018893	-15.552	0.000	-17.84718	-13.84538
count35	-13.98874	1.051853	-13.299	0.000	-16.05437	-11.92312
count36	-11.32689	.445013	-25.453	0.000	-12.20081	-10.45298
count37	-14.3198	.9864257	-14.517	0.000	-16.25694	-12.38266
count38	-15.32943	1.035349	-14.806	0.000	-17.36264	-13.29621
count39	-12.29301	1.201563	-10.231	0.000	-14.65264	-9.933388
count40	-15.2262	1.210296	-12.581	0.000	-17.60298	-12.84942
count41	-12.48471	.7102517	-17.578	0.000	-13.8795	-11.08992

count42	-14.5895	1.186224	-12.299	0.000	-16.91901	-12.26
count43	-13.94064	.9301068	-14.988	0.000	-15.76718	-12.1141
count44	-13.12641	1.013765	-12.948	0.000	-15.11724	-11.13558
count45	-15.42874	1.135199	-13.591	0.000	-17.65804	-13.19944
count46	-14.85653	1.23507	-12.029	0.000	-17.28196	-12.4311
count47	-13.4554	1.047945	-12.840	0.000	-15.51335	-11.39745
count48	-12.85233	1.080072	-11.900	0.000	-14.97337	-10.73129
count49	-9.920555	.830406	-11.947	0.000	-11.5513	-8.289806
count50	-10.65241	.8099458	-13.152	0.000	-12.24298	-9.061841
count51	-11.87104	.5996936	-19.795	0.000	-13.04872	-10.69337
count52	-10.8682	1.506907	-7.212	0.000	-13.82746	-7.908938
count53	-13.18737	.8729501	-15.107	0.000	-14.90167	-11.47307
count54	(dropped)					
count55	-13.28071	.9896326	-13.420	0.000	-15.22415	-11.33727
count56	-13.72282	.9624754	-14.258	0.000	-15.61292	-11.83271
count57	-13.8926	1.014091	-13.700	0.000	-15.88407	-11.90113
count58	-15.01795	1.048918	-14.318	0.000	-17.07781	-12.95809
count59	-13.63739	.9787874	-13.933	0.000	-15.55953	-11.71525
count60	-12.08404	.8884307	-13.602	0.000	-13.82874	-10.33934
count61	-12.13458	1.606595	-7.553	0.000	-15.2896	-8.979551
count62	-13.2836	.901992	-14.727	0.000	-15.05493	-11.51227
count63	-12.52363	.8578467	-14.599	0.000	-14.20826	-10.83899
count64	-10.82042	1.179923	-9.170	0.000	-13.13755	-8.503286
count65	(dropped)					
count66	(dropped)					
count67	-9.965191	1.02715	-9.702	0.000	-11.98231	-7.948077
count68	-11.46787	1.861846	-6.159	0.000	-15.12415	-7.811578
count69	-11.86786	1.508839	-7.866	0.000	-14.83091	-8.904807
count70	-13.56533	.9894263	-13.710	0.000	-15.50836	-11.6223
count71	-14.86403	1.378956	-10.779	0.000	-17.57202	-12.15604
count72	-13.22482	1.092899	-12.101	0.000	-15.37105	-11.07859
count73	-13.62756	1.186704	-11.484	0.000	-15.958	-11.29711
count74	-13.66821	1.030678	-13.261	0.000	-15.69226	-11.64417
count75	-11.64082	.7458735	-15.607	0.000	-13.10556	-10.17607
count76	-13.8081	.9140956	-15.106	0.000	-15.6032	-12.013
count77	-13.80987	1.132987	-12.189	0.000	-16.03483	-11.58491
count78	-10.84599	.6774697	-16.010	0.000	-12.1764	-9.515572
count79	-11.53081	1.177199	-9.795	0.000	-13.84259	-9.219031
count80	-11.01132	1.38554	-7.947	0.000	-13.73224	-8.290401
count81	-9.255801	.8766657	-10.558	0.000	-10.97739	-7.534207
count82	-17.30638	1.412168	-12.255	0.000	-20.07959	-14.53317
count83	(dropped)					
count84	-15.37428	1.725595	-8.910	0.000	-18.763	-11.98556
count85	-11.53396	1.238059	-9.316	0.000	-13.96526	-9.102664
count86	-16.19868	1.679142	-9.647	0.000	-19.49618	-12.90118
count87	-15.53159	1.478618	-10.504	0.000	-18.4353	-12.62788
count88	-13.54122	1.237674	-10.941	0.000	-15.97176	-11.11068
count89	-11.52723	1.360426	-8.473	0.000	-14.19883	-8.855625
count90	-10.86496	1.189508	-9.134	0.000	-13.20091	-8.529006
count91	-12.18756	1.730898	-7.041	0.000	-15.58669	-8.788426
count92	-12.49621	.8897406	-14.045	0.000	-14.24348	-10.74894
count93	-13.5068	1.237941	-10.911	0.000	-15.93787	-11.07574
count94	-9.944214	1.121698	-8.865	0.000	-12.147	-7.741427
count95	-13.57468	1.117361	-12.149	0.000	-15.76895	-11.38041

count96	-14.98509	1.265377	-11.842	0.000	-17.47004	-12.50015
count97	-16.7139	1.169716	-14.289	0.000	-19.01098	-14.41681
count98	-10.22306	1.000732	-10.216	0.000	-12.1883	-8.25783
count99	-15.14309	1.390154	-10.893	0.000	-17.87307	-12.41311
count100	-14.45805	1.25814	-11.492	0.000	-16.92878	-11.98732
count101	-8.920654	.8934242	-9.985	0.000	-10.67516	-7.16615
count102	-10.67203	1.327985	-8.036	0.000	-13.27993	-8.064138
count103	-10.31617	1.119301	-9.217	0.000	-12.51426	-8.118094
count104	-14.51803	1.121148	-12.949	0.000	-16.71974	-12.31632
count105	-13.23374	1.048781	-12.618	0.000	-15.29333	-11.17415
count106	-13.02171	1.136742	-11.455	0.000	-15.25404	-10.78938
count107	-14.70418	1.251697	-11.747	0.000	-17.16226	-12.2461
count108	-9.743415	1.100423	-8.854	0.000	-11.90442	-7.582407
count109	-14.45788	1.105447	-13.079	0.000	-16.62875	-12.287
count110	-11.18984	1.342682	-8.334	0.000	-13.8266	-8.553084
count111	-10.6719	1.385857	-7.701	0.000	-13.39344	-7.950355
count112	-12.34157	1.079577	-11.432	0.000	-14.46164	-10.2215
count113	-10.74626	.940105	-11.431	0.000	-12.59243	-8.90008
count114	-11.61953	1.140211	-10.191	0.000	-13.85867	-9.380383
count115	-10.75879	1.288017	-8.353	0.000	-13.28819	-8.229381
count116	-11.15988	1.27152	-8.777	0.000	-13.65689	-8.662875
count117	-11.74507	1.636109	-7.179	0.000	-14.95806	-8.532084
count118	-10.52083	1.445794	-7.277	0.000	-13.36008	-7.681584
count119	-11.42754	1.661594	-6.877	0.000	-14.69058	-8.164509
count120	-11.56424	1.347403	-8.583	0.000	-14.21027	-8.918217
count121	-10.8849	1.363829	-7.981	0.000	-13.56318	-8.206611
count122	-9.856589	.7967156	-12.372	0.000	-11.42118	-8.292001
count123	-10.64499	1.198611	-8.881	0.000	-12.99882	-8.291159
count124	-12.23516	1.638213	-7.469	0.000	-15.45228	-9.018039
count125	-8.814373	.8902898	-9.901	0.000	-10.56272	-7.066024
count126	-11.50852	.6726432	-17.109	0.000	-12.82946	-10.18759
count127	-11.12656	1.428835	-7.787	0.000	-13.9325	-8.320619
count128	-11.21217	1.247112	-8.991	0.000	-13.66125	-8.763097
count129	-12.61495	1.242084	-10.156	0.000	-15.05415	-10.17575
count130	-11.93897	1.34851	-8.853	0.000	-14.58717	-9.290771
count131	-12.13649	1.239687	-9.790	0.000	-14.57099	-9.701997
count132	-12.10301	1.559776	-7.759	0.000	-15.16609	-9.039923
count133	-11.13558	1.365526	-8.155	0.000	-13.81719	-8.453963
count134	-11.6918	1.325515	-8.821	0.000	-14.29484	-9.088753
count135	-14.09019	1.25401	-11.236	0.000	-16.55281	-11.62757
count136	-11.23773	1.654359	-6.793	0.000	-14.48656	-7.988907
count137	-11.7019	1.846966	-6.336	0.000	-15.32897	-8.074832
count138	-11.6381	1.466941	-7.934	0.000	-14.51887	-8.75732
count139	-10.97644	1.425635	-7.699	0.000	-13.7761	-8.176783
count140	-12.47787	.729705	-17.100	0.000	-13.91087	-11.04488
count141	-11.10468	1.199329	-9.259	0.000	-13.45992	-8.749437
count142	-13.68004	.9199494	-14.870	0.000	-15.48664	-11.87345
count143	-12.4434	.6888125	-18.065	0.000	-13.79609	-11.09071
count144	(dropped)					
count145	-11.8279	.5937262	-19.921	0.000	-12.99386	-10.66194

175. predict pla5emis;
(288 missing values generated)

176. predict se_emis, stdf;
(288 missing values generated)

177. generate u = pla5emis-la5emis;
(305 missing values generated)

178. list coun year pla5emis la5emis u se_emis if counindx==88;

	coun	year	pla5emis	la5emis	u	se_emis
665.	CHINA	1962	.	5.11556	.	.
666.	CHINA	1992	6.704337	6.518021	.1863155	.2963653
667.	CHINA	1957	.	3.968974	.	.
668.	CHINA	1972	5.340481	5.294098	.0463829	.2920193
669.	CHINA	1967	4.772368	4.844869	-.0725002	.2941483
670.	CHINA	1977	5.765073	5.733543	.0315299	.2917822
671.	CHINA	1987	6.328933	6.274206	.0547266	.2933853
672.	CHINA	1982	5.962932	6.02307	-.0601387	.2921578

179. list coun year pla5emis la5emis u se_emis if counindx==90;

	coun	year	pla5emis	la5emis	u	se_emis
681.	INDIA	1992	5.10404	5.236049	-.132009	.288195
682.	INDIA	1957	3.292674	3.157894	.1347806	.2863187
683.	INDIA	1982	4.539704	4.575284	-.0355797	.2854518
684.	INDIA	1967	3.847987	3.802467	.0455203	.2848439
685.	INDIA	1987	4.781156	4.901045	-.1198897	.2863136
686.	INDIA	1972	3.946815	3.99889	-.0520759	.2849312
687.	INDIA	1962	3.544699	3.510835	.0338647	.2853957
688.	INDIA	1977	4.249262	4.255882	-.0066204	.2849356

180. list coun year pla5emis la5emis u se_emis if counindx==64;

	coun	year	pla5emis	la5emis	u	se_emis
481.	MEXICO	1992	4.40379	4.441646	-.0378556	.2881665

```
 >
482.            MEXICO      1977   3.803514   3.748322   .0551918   .2852487
 >
483.            MEXICO      1962   2.766761   2.810968  -.0442064   .2862381
 >
484.            MEXICO      1967   3.093215   3.050069   .0431464   .2851031
 >
485.            MEXICO      1957   2.474122    2.41135   .0627725    .288406
 >
486.            MEXICO      1982   4.082422   4.248595  -.1661735    .286164
 >
487.            MEXICO      1972   3.469037   3.374826   .0942106    .284724
 >
488.            MEXICO      1987   4.293601   4.338542  -.0449414   .2882048
 >
```

181. gen err = (pla5emis - la5emis);
(305 missing values generated)

182. gen p5emis = exp(pla5emis);
(288 missing values generated)

183. gen a5emis = exp(la5emis);
(62 missing values generated)

184. gen err2 = (p5emis - a5emis)/a5emis;
(305 missing values generated)

185. gen sqerr = (pla5emis - la5emis)*(pla5emis - la5emis);
(305 missing values generated)

186. gen sumsqerr = sum(sqerr);

187. list sumsqerr if time==43;

```
      sumsqerr
  2.   .023478
 11.  .2103592
 18.  1.136025
 29.   1.30021
 35.  1.396681
 41.  1.814867
 50.  2.205735
 58.    3.6551
 65.  4.032362
 74.  4.556976
 82.  5.020313
 89.  5.172869
100.  5.837605
105.  5.862913
114.  6.020204
123.  6.780175
131.  8.030936
137.  8.137764
```

146.	8.271928
154.	8.406983
162.	8.456677
169.	9.088046
180.	9.661695
185.	9.81104
195.	10.11996
203.	10.21961
211.	12.62149
217.	13.30805
225.	13.69394
234.	14.76797
243.	15.42535
249.	16.95956
259.	18.66379
265.	19.16611
275.	19.55083
283.	19.92155
289.	21.89333
297.	22.27033
305.	22.72296
313.	22.98276
323.	23.33371
331.	23.96542
337.	23.96563
346.	24.17921
353.	24.31618
361.	26.36512
370.	27.5872
378.	27.73341
385.	27.81207
395.	27.81207
407.	28.06314
409.	28.29008
417.	28.50257
430.	28.61851
433.	28.61978
441.	28.89542
449.	29.05805
458.	29.24846
465.	29.49994
474.	29.66329
481.	30.18176
489.	30.23107
497.	30.90645
505.	31.21278
514.	31.26517
527.	31.26517
529.	31.26517
537.	31.73424
545.	31.86741
553.	31.92974
561.	32.3152
569.	32.56049

577.	32.92941
585.	33.22837
593.	33.67659
601.	33.89172
609.	34.37274
617.	34.64719
625.	34.83319
633.	35.36821
642.	36.58754
651.	37.15506
658.	39.2262
666.	39.26092
674.	39.28865
681.	39.31023
690.	39.40836
697.	39.49459
706.	39.75079
713.	40.25948
721.	40.4875
729.	40.57829
737.	40.86078
748.	40.99413
757.	40.99414
761.	41.02803
770.	41.36049
778.	41.48341
785.	41.59098
793.	41.83765
806.	42.12275
811.	42.12275
819.	42.704
825.	44.22042
833.	44.71806
841.	44.81516
849.	45.0145
860.	45.74889
869.	45.74889
873.	45.91822
881.	46.35245
892.	46.80762
897.	46.95969
907.	47.65092
913.	47.81513
921.	47.86085
929.	48.8552
940.	49.20094
945.	49.20226
953.	49.43148
962.	50.28746
969.	50.5376
977.	51.10771
985.	51.1544
993.	52.13161
1001.	52.66821

```
1009.  52.91617
1017.  53.18138
1027.  53.37037
1033.  53.43302
1041.  53.83736
1049.  53.97085
1057.  54.38285
1065.  54.63206
1073.  54.73864
1081.   55.0439
1091.  55.42176
1099.  55.45096
1105.  55.47816
1115.  55.55516
1121.  55.73764
1130.  55.88057
1139.  56.72769
1149.  56.72769
1157.  56.72769
```

```
188. graph err2 if time==43, histogram bin(20) normal freq
  > xlab(-1.0,-0.9,-0.8,-0.7,-0.6,-0.5,-0.4,-0.3,-0.2,-0.1,0,0.1,0.2,0.3,0.4,0.5,
  > 0.6,0.7,0.8, 0.9,1.0);

.
end of do-file

.
```

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College Station, Texas 77840
409-696-4600, fax 409-696-4601

.

Statistics/Data Analysis

```
1. set more 1;

2. gen annex1 = counindx == 54| counindx == 67| counindx == 72| counindx == 95|
 > counindx == 116| counindx == 117| counindx == 118| counindx == 120| counindx
 > == 121|
 > counindx == 122| counindx == 123| counindx == 124| counindx == 125| counindx
 > == 126|
 > counindx == 127| counindx == 128| counindx == 129| counindx == 130| counindx
 > == 131|
 > counindx == 133| counindx == 134| counindx == 135| counindx == 136| counindx
 > == 137|
 > counindx == 138| counindx == 139| counindx == 140| counindx == 142| counindx
 > == 143|
 > counindx == 144| counindx == 145| counindx == 147;

3. generate lgdp15 = ln(gdp_ppp[_n-5]);
(1501 missing values generated)

4. generate lgdp16 = ln(gdp_ppp[_n-6]);
(1502 missing values generated)

5. generate lpop15 = ln(pop[_n-5]);
(1466 missing values generated)

6. generate dev = popgdp[_n+20] if time==1;
(6403 missing values generated)

7. replace dev = popgdp[_n+19] if time==2;
(133 real changes made)

8. replace dev = popgdp[_n+18] if time==3;
(133 real changes made)

9. replace dev = popgdp[_n+17] if time==4;
(133 real changes made)

10. replace dev = popgdp[_n+16] if time==5;
(133 real changes made)

11. replace dev = popgdp[_n+15] if time==6;
(133 real changes made)

12. replace dev = popgdp[_n+14] if time==7;
(133 real changes made)

13. replace dev = popgdp[_n+13] if time==8;
(133 real changes made)

14. replace dev = popgdp[_n+12] if time==9;
(133 real changes made)

15. replace dev = popgdp[_n+11] if time==10;
```

(133 real changes made)

16. **replace dev = popgdp[_n+10] if time==11;**
(133 real changes made)

17. **replace dev = popgdp[_n+9] if time==12;**
(133 real changes made)

18. **replace dev = popgdp[_n+8] if time==13;**
(133 real changes made)

19. **replace dev = popgdp[_n+7] if time==14;**
(133 real changes made)

20. **replace dev = popgdp[_n+6] if time==15;**
(133 real changes made)

21. **replace dev = popgdp[_n+5] if time==16;**
(133 real changes made)

22. **replace dev = popgdp[_n+4] if time==17;**
(133 real changes made)

23. **replace dev = popgdp[_n+3] if time==18;**
(133 real changes made)

24. **replace dev = popgdp[_n+2] if time==19;**
(133 real changes made)

25. **replace dev = popgdp[_n+1] if time==20;**
(133 real changes made)

26. **replace dev = popgdp if time==21;**
(133 real changes made)

27. **replace dev = popgdp[_n-1] if time==22;**
(133 real changes made)

28. **replace dev = popgdp[_n-2] if time==23;**
(133 real changes made)

29. **replace dev = popgdp[_n-3] if time==24;**
(133 real changes made)

30. **replace dev = popgdp[_n-4] if time==25;**
(133 real changes made)

31. **replace dev = popgdp[_n-5] if time==26;**
(133 real changes made)

32. **replace dev = popgdp[_n-6] if time==27;**
(133 real changes made)

33. **replace dev = popgdp[_n-7] if time==28;**

(133 real changes made)

34. **replace dev = popgdp[_n-8] if time==29;**
(133 real changes made)

35. **replace dev = popgdp[_n-9] if time==30;**
(133 real changes made)

36. **replace dev = popgdp[_n-10] if time==31;**
(133 real changes made)

37. **replace dev = popgdp[_n-11] if time==32;**
(133 real changes made)

38. **replace dev = popgdp[_n-12] if time==33;**
(133 real changes made)

39. **replace dev = popgdp[_n-13] if time==34;**
(133 real changes made)

40. **replace dev = popgdp[_n-14] if time==35;**
(133 real changes made)

41. **replace dev = popgdp[_n-15] if time==36;**
(133 real changes made)

42. **replace dev = popgdp[_n-16] if time==37;**
(133 real changes made)

43. **replace dev = popgdp[_n-17] if time==38;**
(133 real changes made)

44. **replace dev = popgdp[_n-18] if time==39;**
(133 real changes made)

45. **replace dev = popgdp[_n-19] if time==40;**
(133 real changes made)

46. **replace dev = popgdp[_n-20] if time==41;**
(133 real changes made)

47. **replace dev = popgdp[_n-21] if time==42;**
(133 real changes made)

48. **replace dev = popgdp[_n-22] if time==43;**
(133 real changes made)

49. **generate dev2 = popgdp[_n+30] if time==1;**
(6394 missing values generated)

50. **replace dev2 = popgdp[_n+29] if time==2;**
(142 real changes made)

51. **replace dev2 = popgdp[_n+28] if time==3;**

(142 real changes made)

52. **replace dev2 = popgdp[_n+27] if time==4;**
(142 real changes made)

53. **replace dev2 = popgdp[_n+26] if time==5;**
(142 real changes made)

54. **replace dev2 = popgdp[_n+25] if time==6;**
(142 real changes made)

55. **replace dev2 = popgdp[_n+24] if time==7;**
(142 real changes made)

56. **replace dev2 = popgdp[_n+23] if time==8;**
(142 real changes made)

57. **replace dev2 = popgdp[_n+22] if time==9;**
(142 real changes made)

58. **replace dev2 = popgdp[_n+21] if time==10;**
(142 real changes made)

59. **replace dev2 = popgdp[_n+20] if time==11;**
(142 real changes made)

60. **replace dev2 = popgdp[_n+19] if time==12;**
(142 real changes made)

61. **replace dev2 = popgdp[_n+18] if time==13;**
(142 real changes made)

62. **replace dev2 = popgdp[_n+17] if time==14;**
(142 real changes made)

63. **replace dev2 = popgdp[_n+16] if time==15;**
(142 real changes made)

64. **replace dev2 = popgdp[_n+15] if time==16;**
(142 real changes made)

65. **replace dev2 = popgdp[_n+14] if time==17;**
(142 real changes made)

66. **replace dev2 = popgdp[_n+13] if time==18;**
(142 real changes made)

67. **replace dev2 = popgdp[_n+12] if time==19;**
(142 real changes made)

68. **replace dev2 = popgdp[_n+11] if time==20;**
(142 real changes made)

69. **replace dev2 = popgdp[_n+10] if time==21;**

(142 real changes made)

70. **replace dev2 = popgdp[_n+9] if time==22;**
(142 real changes made)

71. **replace dev2 = popgdp[_n+8] if time==23;**
(142 real changes made)

72. **replace dev2 = popgdp[_n+7] if time==24;**
(142 real changes made)

73. **replace dev2 = popgdp[_n+6] if time==25;**
(142 real changes made)

74. **replace dev2 = popgdp[_n+5] if time==26;**
(142 real changes made)

75. **replace dev2 = popgdp[_n+4] if time==27;**
(142 real changes made)

76. **replace dev2 = popgdp[_n+3] if time==28;**
(142 real changes made)

77. **replace dev2 = popgdp[_n+2] if time==29;**
(142 real changes made)

78. **replace dev2 = popgdp[_n+1] if time==30;**
(142 real changes made)

79. **replace dev2 = popgdp if time==31;**
(142 real changes made)

80. **replace dev2 = popgdp[_n-1] if time==32;**
(142 real changes made)

81. **replace dev2 = popgdp[_n-2] if time==33;**
(142 real changes made)

82. **replace dev2 = popgdp[_n-3] if time==34;**
(142 real changes made)

83. **replace dev2 = popgdp[_n-4] if time==35;**
(142 real changes made)

84. **replace dev2 = popgdp[_n-5] if time==36;**
(142 real changes made)

85. **replace dev2 = popgdp[_n-6] if time==37;**
(142 real changes made)

86. **replace dev2 = popgdp[_n-7] if time==38;**
(142 real changes made)

87. **replace dev2 = popgdp[_n-8] if time==39;**

(142 real changes made)

88. **replace dev2 = popgdp[_n-9] if time==40;**
(142 real changes made)

89. **replace dev2 = popgdp[_n-10] if time==41;**
(142 real changes made)

90. **replace dev2 = popgdp[_n-11] if time==42;**
(142 real changes made)

91. **replace dev2 = popgdp[_n-12] if time==43;**
(142 real changes made)

92. **gen devdum = dev >= 4000;**

93. **gen devduma = dev2 >=1610;**

94. **gen devdumb = dev2 >=4500;**

95. **gen afrdum = counindx<=50;**

96. **gen afrdum2 = afrdum*lgdpl5;**
(1501 missing values generated)

97. **gen namdum = counindx<=72;**

98. **replace namdum = 0 if counindx<=50;**
(2149 real changes made)

99. **gen namdum2 = namdum*lgdpl5;**
(1501 missing values generated)

100. **gen samdum = counindx<=84;**

101. **replace samdum = 0 if counindx<=72;**
(3095 real changes made)

102. **gen samdum2 = samdum*lgdpl5;**
(1501 missing values generated)

103. **gen asiadum = counindx<=115;**

104. **replace asiadum = 0 if counindx<=84;**
(3611 real changes made)

105. **gen asiadum2 = asiadum*lgdpl5;**
(1501 missing values generated)

106. **gen eurodum = counindx<=144;**

107. **replace eurodum = 0 if counindx<=115;**
(4944 real changes made)

```
108. gen eurodum2 = eurodum*lgdpl5;
(1501 missing values generated)

109. gen ausdum = counindx<=152;

110. replace ausdum = 0 if counindx<=144;
(6191 real changes made)

111. gen ausdum2 = ausdum*lgdpl5;
(1501 missing values generated)

112. gen inv = (invest/100);
(1496 missing values generated)

113. generate la5emis = ln((totalcd + totalcd[_n-1] + totalcd[_n-2] + totalcd[_n-3
  > ] +
  > totalcd[_n-4])/5000);
(544 missing values generated)

114. gen devdum2 = (devdum*lgdpl5);
(1501 missing values generated)

115. gen devdum3a = (devduma*lgdpl5);
(1501 missing values generated)

116. gen devdum3b = (devdumb*lgdpl5);
(1501 missing values generated)

117. generate timesq = time*time;

118. gen trend = time;

119. gen trend2 = (trend*lgdpl5);
(1501 missing values generated)

120. drop if counindx==23;
(43 observations deleted)

121. drop if counindx==32;
(43 observations deleted)

122. drop if counindx==59;
(43 observations deleted)

123. drop if counindx==68;
(43 observations deleted)

124. drop if counindx==99;
(43 observations deleted)

125. drop if counindx==101;
(43 observations deleted)

126. drop if counindx==151;
```

(143 observations deleted)

127. drop if time==42;
(145 observations deleted)

128. drop if time==41;
(145 observations deleted)

129. drop if time==40;
(145 observations deleted)

130. drop if time==39;
(145 observations deleted)

131. drop if time==37;
(145 observations deleted)

132. drop if time==36;
(145 observations deleted)

133. drop if time==35;
(145 observations deleted)

134. drop if time==34;
(145 observations deleted)

135. drop if time==32;
(145 observations deleted)

136. drop if time==31;
(145 observations deleted)

137. drop if time==30;
(145 observations deleted)

138. drop if time==29;
(145 observations deleted)

139. drop if time==27;
(145 observations deleted)

140. drop if time==26;
(145 observations deleted)

141. drop if time==25;
(145 observations deleted)

142. drop if time==24;
(145 observations deleted)

143. drop if time==22;
(145 observations deleted)

144. drop if time==21;

(145 observations deleted)

145. **drop if time==20;**
(145 observations deleted)

146. **drop if time==19;**
(145 observations deleted)

147. **drop if time==17;**
(145 observations deleted)

148. **drop if time==16;**
(145 observations deleted)

149. **drop if time==15;**
(145 observations deleted)

150. **drop if time==14;**
(145 observations deleted)

151. **drop if time==12;**
(145 observations deleted)

152. **drop if time==11;**
(145 observations deleted)

153. **drop if time==10;**
(145 observations deleted)

154. **drop if time==9;**
(145 observations deleted)

155. **drop if time==7;**
(145 observations deleted)

156. **drop if time==6;**
(145 observations deleted)

157. **drop if time==5;**
(145 observations deleted)

158. **drop if time==4;**
(145 observations deleted)

159. **drop if time==3;**
(145 observations deleted)

160. **drop if time==2;**
(145 observations deleted)

161. **drop if time==1;**
(144 observations deleted)

162. **set matsize 300;**

```
163. generate time2=1 if time==8;
(1015 missing values generated)

164. replace time2=2 if time==13;
(145 real changes made)

165. replace time2=3 if time==18;
(145 real changes made)

166. replace time2=4 if time==23;
(145 real changes made)

167. replace time2=5 if time==28;
(145 real changes made)

168. replace time2=6 if time==33;
(145 real changes made)

169. replace time2=7 if time==38;
(145 real changes made)

170. replace time2=8 if time==43;
(145 real changes made)

171. generate time2sq = time2*time2;

172. tab counindx, generate(count);
```

counindx	Freq.	Percent	Cum.
1	8	0.69	0.69
2	8	0.69	1.38
3	8	0.69	2.07
4	8	0.69	2.76
5	8	0.69	3.45
6	8	0.69	4.14
7	8	0.69	4.83
8	8	0.69	5.52
9	8	0.69	6.21
10	8	0.69	6.90
11	8	0.69	7.59
12	8	0.69	8.28
13	8	0.69	8.97
14	8	0.69	9.66
15	8	0.69	10.34
16	8	0.69	11.03
17	8	0.69	11.72
18	8	0.69	12.41
19	8	0.69	13.10
20	8	0.69	13.79
21	8	0.69	14.48
22	8	0.69	15.17
24	8	0.69	15.86

25	8	0.69	16.55
26	8	0.69	17.24
27	8	0.69	17.93
28	8	0.69	18.62
29	8	0.69	19.31
30	8	0.69	20.00
31	8	0.69	20.69
33	8	0.69	21.38
34	8	0.69	22.07
35	8	0.69	22.76
36	8	0.69	23.45
37	8	0.69	24.14
38	8	0.69	24.83
39	8	0.69	25.52
40	8	0.69	26.21
41	8	0.69	26.90
42	8	0.69	27.59
43	8	0.69	28.28
44	8	0.69	28.97
45	8	0.69	29.66
46	8	0.69	30.34
47	8	0.69	31.03
48	8	0.69	31.72
49	8	0.69	32.41
50	8	0.69	33.10
51	8	0.69	33.79
52	8	0.69	34.48
53	8	0.69	35.17
54	8	0.69	35.86
55	8	0.69	36.55
56	8	0.69	37.24
57	8	0.69	37.93
58	8	0.69	38.62
60	8	0.69	39.31
61	8	0.69	40.00
62	8	0.69	40.69
63	8	0.69	41.38
64	8	0.69	42.07
65	8	0.69	42.76
66	8	0.69	43.45
67	8	0.69	44.14
69	8	0.69	44.83
70	8	0.69	45.52
71	8	0.69	46.21
72	8	0.69	46.90
73	8	0.69	47.59
74	8	0.69	48.28
75	8	0.69	48.97
76	8	0.69	49.66
77	8	0.69	50.34
78	8	0.69	51.03
79	8	0.69	51.72
80	8	0.69	52.41
81	8	0.69	53.10

82	8	0.69	53.79
83	8	0.69	54.48
84	8	0.69	55.17
85	8	0.69	55.86
86	8	0.69	56.55
87	8	0.69	57.24
88	8	0.69	57.93
89	8	0.69	58.62
90	8	0.69	59.31
91	8	0.69	60.00
92	8	0.69	60.69
93	8	0.69	61.38
94	8	0.69	62.07
95	8	0.69	62.76
96	8	0.69	63.45
97	8	0.69	64.14
98	8	0.69	64.83
100	8	0.69	65.52
102	8	0.69	66.21
103	8	0.69	66.90
104	8	0.69	67.59
105	8	0.69	68.28
106	8	0.69	68.97
107	8	0.69	69.66
108	8	0.69	70.34
109	8	0.69	71.03
110	8	0.69	71.72
111	8	0.69	72.41
112	8	0.69	73.10
113	8	0.69	73.79
114	8	0.69	74.48
115	8	0.69	75.17
116	8	0.69	75.86
117	8	0.69	76.55
118	8	0.69	77.24
119	8	0.69	77.93
120	8	0.69	78.62
121	8	0.69	79.31
122	8	0.69	80.00
123	8	0.69	80.69
124	8	0.69	81.38
125	8	0.69	82.07
126	8	0.69	82.76
127	8	0.69	83.45
128	8	0.69	84.14
129	8	0.69	84.83
130	8	0.69	85.52
131	8	0.69	86.21
132	8	0.69	86.90
133	8	0.69	87.59
134	8	0.69	88.28
135	8	0.69	88.97
136	8	0.69	89.66
137	8	0.69	90.34

138	8	0.69	91.03
139	8	0.69	91.72
140	8	0.69	92.41
141	8	0.69	93.10
142	8	0.69	93.79
143	8	0.69	94.48
144	8	0.69	95.17
145	8	0.69	95.86
146	8	0.69	96.55
147	8	0.69	97.24
148	8	0.69	97.93
149	8	0.69	98.62
150	8	0.69	99.31
152	8	0.69	100.00
Total	1160	100.00	

173. xtreg la5emis lgdp15 lgdp16 lpop15 inv devdum3a devdum3b if time<=42, fe i(co
> unindx);

Fixed-effects (within) regression

sd(u_counindx)	= 1.801879	Number of obs	= 767
sd(e_counindx_t)	= .2661207	n	= 140
sd(e_counindx_t + u_counindx)	= 1.821425	T-bar	= 5.47857
corr(u_counindx, Xb)	= -0.3854	R-sq within	= 0.8090
		between	= 0.5772
		overall	= 0.5951
		F(6, 621)	= 438.27
		Prob > F	= 0.0000

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdp15	1.100802	.1892746	5.816	0.000	.7291063	1.472498
lgdp16	-.1661101	.1919927	-0.865	0.387	-.5431436	.2109234
lpop15	.6714507	.1136197	5.910	0.000	.4483253	.8945761
inv	1.820663	.2402176	7.579	0.000	1.348926	2.2924
devdum3a	-.0543448	.0640793	-0.848	0.397	-.1801833	.0714937
devdum3b	-.1420707	.0521729	-2.723	0.007	-.2445274	-.0396141
_cons	-13.49319	.614551	-21.956	0.000	-14.70004	-12.28634
counindx	F(139,621) =	29.185	0.000		(140 categories)	

174. regress la5emis lgdp15 lgdp16 lpop15 inv devdum3a devdum3b count* if time<=4
> 2, noconstant;

Source	SS	df	MS		
Model	5192.26225	146	35.56344	Number of obs	= 767
Residual	43.9793707	621	.070820243	F(146, 621)	= 502.16
Total	5236.24162	767	6.82691215	Prob > F	= 0.0000
				R-squared	= 0.9916
				Adj R-squared	= 0.9896
				Root MSE	= .26612

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	1.100802	.1892746	5.816	0.000	.7291059	1.472498
lgdpl6	-.1661099	.1919926	-0.865	0.387	-.5431434	.2109236
lpopl5	.6714509	.1136197	5.910	0.000	.4483255	.8945762
inv	1.820663	.2402176	7.579	0.000	1.348926	2.2924
devdum3a	-.0543447	.0640793	-0.848	0.397	-.1801832	.0714938
devdum3b	-.1420707	.0521729	-2.723	0.007	-.2445274	-.039614
count1	-13.87225	.6975183	-19.888	0.000	-15.24203	-12.50247
count2	-14.1027	.673947	-20.926	0.000	-15.42619	-12.77921
count3	-15.44289	.6118431	-25.240	0.000	-16.64443	-14.24136
count4	-12.60299	.5091288	-24.754	0.000	-13.60282	-11.60317
count5	-16.11247	.6767995	-23.807	0.000	-17.44156	-14.78338
count6	-16.38359	.6366186	-25.735	0.000	-17.63377	-15.1334
count7	-15.28403	.6826276	-22.390	0.000	-16.62456	-13.94349
count8	-13.09046	.4456259	-29.375	0.000	-13.96558	-12.21535
count9	-15.2896	.5893934	-25.941	0.000	-16.44705	-14.13216
count10	-15.97126	.6384935	-25.014	0.000	-17.22513	-14.7174
count11	-13.76837	.4471878	-30.789	0.000	-14.64655	-12.89019
count12	-13.43371	.5306298	-25.317	0.000	-14.47575	-12.39166
count13	-12.23001	.4473712	-27.338	0.000	-13.10856	-11.35147
count14	-14.17313	.7645907	-18.537	0.000	-15.67462	-12.67163
count15	-16.72917	.7882469	-21.223	0.000	-18.27712	-15.18122
count16	-10.77373	.5828753	-18.484	0.000	-11.91837	-9.629081
count17	-13.66474	.4871953	-28.048	0.000	-14.62149	-12.70799
count18	-15.04603	.693552	-21.694	0.000	-16.40802	-13.68404
count19	-14.5568	.6457131	-22.544	0.000	-15.82484	-13.28875
count20	-13.89926	.5060026	-27.469	0.000	-14.89295	-12.90558
count21	-14.35739	.638608	-22.482	0.000	-15.61148	-13.10329
count22	-15.00037	.7125551	-21.052	0.000	-16.39968	-13.60106
count23	-12.88378	.5633373	-22.870	0.000	-13.99006	-11.7775
count24	-15.67159	.6819868	-22.979	0.000	-17.01087	-14.33231
count25	-15.18905	.6674023	-22.758	0.000	-16.49969	-13.87842
count26	-15.807	.669872	-23.597	0.000	-17.12249	-14.49151
count27	-13.79744	.5556938	-24.829	0.000	-14.88871	-12.70618
count28	-13.68343	.4684593	-29.209	0.000	-14.60338	-12.76347
count29	-14.47369	.7050468	-20.529	0.000	-15.85826	-13.08913
count30	-15.47241	.7071854	-21.879	0.000	-16.86118	-14.08365
count31	-15.67919	.64983	-24.128	0.000	-16.95532	-14.40306
count32	-15.90024	.8318415	-19.115	0.000	-17.5338	-14.26668
count33	-12.69036	.4505875	-28.164	0.000	-13.57522	-11.8055
count34	-16.36463	.64289	-25.455	0.000	-17.62713	-15.10213
count35	-14.53164	.6488614	-22.396	0.000	-15.80587	-13.25741
count36	-11.53825	.3068106	-37.607	0.000	-12.14076	-10.93574
count37	-14.82692	.6123771	-24.212	0.000	-16.0295	-13.62434
count38	-15.86041	.6452261	-24.581	0.000	-17.1275	-14.59332
count39	-12.92801	.7114689	-18.171	0.000	-14.32518	-11.53083
count40	-15.8453	.7573104	-20.923	0.000	-17.3325	-14.3581
count41	-12.845	.4500855	-28.539	0.000	-13.72888	-11.96113
count42	-15.18444	.76419	-19.870	0.000	-16.68515	-13.68373
count43	-14.40771	.5981292	-24.088	0.000	-15.58231	-13.23311
count44	-13.64782	.6288869	-21.702	0.000	-14.88283	-12.41282

count45	-16.01621	.6972379	-22.971	0.000	-17.38544	-14.64698
count46	-15.49562	.7586966	-20.424	0.000	-16.98555	-14.0057
count47	-13.99189	.6548935	-21.365	0.000	-15.27796	-12.70581
count48	-13.40699	.6716739	-19.961	0.000	-14.72602	-12.08796
count49	-10.33227	.5434553	-19.012	0.000	-11.39951	-9.265042
count50	-11.06925	.5019616	-22.052	0.000	-12.055	-10.0835
count51	-12.14304	.4330394	-28.041	0.000	-12.99344	-11.29264
count52	-11.66836	.8843322	-13.195	0.000	-13.40501	-9.931718
count53	-13.64377	.5269504	-25.892	0.000	-14.67859	-12.60895
count54	(dropped)					
count55	-13.79257	.6083844	-22.671	0.000	-14.98731	-12.59783
count56	-14.22217	.5886725	-24.160	0.000	-15.3782	-13.06614
count57	-14.42196	.6138206	-23.495	0.000	-15.62738	-13.21655
count58	-15.55733	.6509282	-23.900	0.000	-16.83562	-14.27904
count59	-14.14526	.5985376	-23.633	0.000	-15.32066	-12.96986
count60	-12.54445	.5444158	-23.042	0.000	-13.61357	-11.47533
count61	-12.97428	.9703429	-13.371	0.000	-14.87984	-11.06873
count62	-13.7521	.5506325	-24.975	0.000	-14.83342	-12.67077
count63	-12.96925	.5235739	-24.771	0.000	-13.99744	-11.94106
count64	-11.43596	.7149637	-15.995	0.000	-12.84	-10.03192
count65	(dropped)					
count66	(dropped)					
count67	-10.50766	.6089137	-17.256	0.000	-11.70344	-9.311885
count68	-12.45862	1.088169	-11.449	0.000	-14.59555	-10.32168
count69	-12.66137	.9013761	-14.047	0.000	-14.43149	-10.89126
count70	-14.07744	.6075438	-23.171	0.000	-15.27053	-12.88436
count71	-15.59081	.8205641	-19.000	0.000	-17.20222	-13.97939
count72	-13.80337	.6450829	-21.398	0.000	-15.07018	-12.53656
count73	-14.25026	.7117801	-20.021	0.000	-15.64804	-12.85247
count74	-14.20489	.6265368	-22.672	0.000	-15.43528	-12.97451
count75	-12.02445	.4627022	-25.987	0.000	-12.9331	-11.1158
count76	-14.27956	.5645286	-25.295	0.000	-15.38818	-13.17095
count77	-14.40598	.6763164	-21.301	0.000	-15.73412	-13.07783
count78	-11.19319	.4226426	-26.484	0.000	-12.02318	-10.36321
count79	-12.14741	.708328	-17.149	0.000	-13.53842	-10.75641
count80	-11.74293	.8216774	-14.291	0.000	-13.35653	-10.12932
count81	-9.705741	.5456837	-17.786	0.000	-10.77735	-8.634133
count82	-18.04414	.8535699	-21.140	0.000	-19.72038	-16.36791
count83	(dropped)					
count84	-16.27675	1.041072	-15.635	0.000	-18.3212	-14.2323
count85	-12.17789	.7540559	-16.150	0.000	-13.6587	-10.69708
count86	-17.08185	1.002924	-17.032	0.000	-19.05138	-15.11231
count87	-16.30237	.8971308	-18.172	0.000	-18.06415	-14.54059
count88	-14.19684	.7296431	-19.457	0.000	-15.62971	-12.76397
count89	-12.23807	.8220736	-14.887	0.000	-13.85245	-10.62368
count90	-11.48635	.7190664	-15.974	0.000	-12.89845	-10.07426
count91	-13.09435	1.041159	-12.577	0.000	-15.13897	-11.04973
count92	-12.95472	.5502338	-23.544	0.000	-14.03527	-11.87418
count93	-14.15	.7553149	-18.734	0.000	-15.63328	-12.66672
count94	-10.52217	.6938689	-15.164	0.000	-11.88478	-9.159554
count95	-14.15299	.6861434	-20.627	0.000	-15.50044	-12.80555
count96	-15.63549	.7858182	-19.897	0.000	-17.17867	-14.0923
count97	-17.31628	.7241638	-23.912	0.000	-18.73839	-15.89418
count98	-10.73892	.6185937	-17.360	0.000	-11.95371	-9.524134

count99	-15.87077	.837396	-18.953	0.000	-17.51524	-14.2263
count100	-15.11182	.7674891	-19.690	0.000	-16.61901	-13.60463
count101	-9.379792	.5549723	-16.901	0.000	-10.46964	-8.289942
count102	-11.37188	.7903554	-14.388	0.000	-12.92398	-9.819791
count103	-10.89104	.6959554	-15.649	0.000	-12.25775	-9.52433
count104	-15.0984	.6882838	-21.936	0.000	-16.45004	-13.74675
count105	-13.78054	.6361584	-21.662	0.000	-15.02982	-12.53126
count106	-13.61579	.6866673	-19.829	0.000	-14.96426	-12.26732
count107	-15.35381	.7651059	-20.068	0.000	-16.85632	-13.8513
count108	-10.31619	.6693789	-15.412	0.000	-11.63071	-9.001666
count109	-15.02203	.694176	-21.640	0.000	-16.38525	-13.65882
count110	-11.89763	.798704	-14.896	0.000	-13.46612	-10.32914
count111	-11.40454	.8200653	-13.907	0.000	-13.01498	-9.794103
count112	-12.88812	.6861514	-18.783	0.000	-14.23558	-11.54066
count113	-11.22962	.5835165	-19.245	0.000	-12.37552	-10.08371
count114	-12.21521	.6891895	-17.724	0.000	-13.56863	-10.86178
count115	-11.44113	.7592086	-15.070	0.000	-12.93206	-9.950201
count116	-11.82988	.7569477	-15.628	0.000	-13.31637	-10.34339
count117	-12.60981	.9685659	-13.019	0.000	-14.51187	-10.70775
count118	-11.27187	.8824299	-12.774	0.000	-13.00478	-9.538966
count119	-12.30586	.9834325	-12.513	0.000	-14.23711	-10.3746
count120	-12.26484	.8210536	-14.938	0.000	-13.87722	-10.65247
count121	-11.58783	.8432266	-13.742	0.000	-13.24375	-9.931905
count122	-10.27484	.4774927	-21.518	0.000	-11.21253	-9.337139
count123	-11.27163	.7235814	-15.578	0.000	-12.6926	-9.850669
count124	-13.09742	.9772099	-13.403	0.000	-15.01646	-11.17838
count125	-9.286081	.5246335	-17.700	0.000	-10.31635	-8.25581
count126	-11.85212	.4217861	-28.100	0.000	-12.68042	-11.02382
count127	-11.88248	.8443333	-14.073	0.000	-13.54058	-10.22439
count128	-11.87059	.739769	-16.046	0.000	-13.32335	-10.41784
count129	-13.26509	.7482807	-17.727	0.000	-14.73455	-11.79562
count130	-12.6375	.8269542	-15.282	0.000	-14.26146	-11.01353
count131	-12.7765	.7644154	-16.714	0.000	-14.27765	-11.27535
count132	-12.92037	.93777	-13.778	0.000	-14.76196	-11.07879
count133	-11.8609	.8008736	-14.810	0.000	-13.43365	-10.28815
count134	-12.39762	.7736975	-16.024	0.000	-13.917	-10.87824
count135	-14.74808	.7524201	-19.601	0.000	-16.22567	-13.27048
count136	-12.11379	.9758908	-12.413	0.000	-14.03024	-10.19735
count137	-12.66298	1.124029	-11.266	0.000	-14.87034	-10.45562
count138	-12.39711	.9012533	-13.755	0.000	-14.16699	-10.62724
count139	-11.73302	.8375426	-14.009	0.000	-13.37778	-10.08826
count140	-12.8533	.4524542	-28.408	0.000	-13.74183	-11.96478
count141	-11.74126	.7043607	-16.669	0.000	-13.12448	-10.35805
count142	-14.15142	.5741111	-24.649	0.000	-15.27885	-13.02399
count143	-12.75788	.4943571	-25.807	0.000	-13.72869	-11.78707
count144	(dropped)					
count145	-12.0864	.443888	-27.228	0.000	-12.9581	-11.21469

175. predict pla5emis;
(288 missing values generated)

176. predict se_emis, stdf;
(288 missing values generated)

177. generate u = pla5emis-la5emis;
(305 missing values generated)

178. list coun year pla5emis la5emis u se_emis if counindx==88;

	coun	year	pla5emis	la5emis	u	se_emis
665.	CHINA	1962	.	5.11556	.	.
666.	CHINA	1957	.	3.968974	.	.
667.	CHINA	1992	6.701783	6.518021	.1837621	.2962038
668.	CHINA	1982	5.9619	6.02307	-.0611706	.2920195
669.	CHINA	1987	6.326691	6.274206	.052485	.2932308
670.	CHINA	1977	5.767773	5.733543	.0342298	.2916193
671.	CHINA	1967	4.77113	4.844869	-.0737391	.2940072
672.	CHINA	1972	5.342293	5.294098	.0481949	.2918723

179. list coun year pla5emis la5emis u se_emis if counindx==90;

	coun	year	pla5emis	la5emis	u	se_emis
681.	INDIA	1992	5.098252	5.236049	-.1377974	.2879277
682.	INDIA	1977	4.246432	4.255882	-.00945	.2847722
683.	INDIA	1972	3.943646	3.99889	-.055244	.2847596
684.	INDIA	1967	3.850537	3.802467	.0480697	.2846867
685.	INDIA	1982	4.534351	4.575284	-.0409327	.2852042
686.	INDIA	1962	3.55086	3.510835	.0400257	.2851102
687.	INDIA	1957	3.301652	3.157894	.1437585	.2858602
688.	INDIA	1987	4.774818	4.901045	-.1262274	.2860192

180. list coun year pla5emis la5emis u se_emis if counindx==64;

	coun	year	pla5emis	la5emis	u	se_emis
481.	MEXICO	1992	4.409868	4.441646	-.0317783	.2878854
482.	MEXICO	1972	3.470434	3.374826	.095608	.2845854

483.	MEXICO	1987	4.308677	4.338542	-.0298653	.2871551
484.	MEXICO	1957	2.459193	2.41135	.0478432	.2873747
485.	MEXICO	1982	4.091536	4.248595	-.1570592	.2856953
486.	MEXICO	1977	3.808526	3.748322	.060204	.2850155
487.	MEXICO	1967	3.086956	3.050069	.0368872	.2848126
488.	MEXICO	1962	2.757349	2.810968	-.0536182	.2857471

```
181. gen err = (pla5emis - la5emis);
(305 missing values generated)

182. gen p5emis = exp(pla5emis);
(288 missing values generated)

183. gen a5emis = exp(la5emis);
(62 missing values generated)

184. gen err2 = (p5emis - a5emis)/a5emis;
(305 missing values generated)

185. gen sqerr = (pla5emis - la5emis)*(pla5emis - la5emis);
(305 missing values generated)

186. gen sumsqerr = sum(sqerr);

187. list sumsqerr if time==43;

      sumsqerr
   3.  .022045
  10. .2082389
  17. 1.167535
  28. 1.336069
  35.  1.42766
  42. 1.859082
  51. 2.270659
  57. 3.720645
  65. 4.111199
  73. 4.656861
  81. 5.156397
  90. 5.306693
  97. 5.968327
 105. 5.992276
 114. 6.148009
 122. 6.910033
 131. 8.135591
 138. 8.237059
 146.  8.36113
 155. 8.492701
 162. 8.541986
```

169. 9.190283
179. 9.781729
186. 9.923688
193. 10.23296
202. 10.33329
209. 12.76673
217. 13.47087
225. 13.86883
234. 14.90446
241. 15.53985
249. 17.09159
258. 18.77841
266. 19.27687
273. 19.65362
281. 20.03043
290. 21.98915
299. 22.36226
305. 22.80662
315. 23.06316
324. 23.41393
331. 24.05228
339. 24.05245
346. 24.26464
353. 24.39441
361. 26.45472
370. 27.66342
378. 27.80924
387. 27.89038
393. 27.89038
407. 28.15418
409. 28.37288
417. 28.58063
428. 28.69754
433. 28.69929
441. 28.97701
449. 29.13562
459. 29.32563
465. 29.59252
474. 29.76011
481. 30.28725
489. 30.3321
497. 31.00391
505. 31.31341
516. 31.36692
521. 31.36692
529. 31.36692
537. 31.83043
545. 31.94988
553. 32.01579
561. 32.41188
569. 32.6485
577. 32.99351
585. 33.29071
593. 33.72963

601. 33.9395
609. 34.41935
619. 34.68874
625. 34.85208
633. 35.35565
642. 36.62481
650. 37.19557
663. 39.2862
667. 39.31997
675. 39.35266
681. 39.3777
690. 39.48252
697. 39.57193
706. 39.83398
713. 40.35358
721. 40.59159
729. 40.68194
737. 40.97857
745. 41.11348
757. 41.11349
761. 41.14806
769. 41.47519
779. 41.59961
785. 41.71563
793. 41.96479
801. 42.24942
809. 42.24942
819. 42.81305
825. 44.29837
833. 44.77068
841. 44.86559
849. 45.07581
861. 45.8028
869. 45.8028
873. 45.95398
881. 46.34457
889. 46.76983
897. 46.92871
907. 47.64015
913. 47.78353
921. 47.83351
929. 48.82943
938. 49.15787
945. 49.15913
953. 49.37416
962. 50.22982
969. 50.47633
977. 51.05083
985. 51.09672
993. 52.05098
1001. 52.55983
1009. 52.79906
1017. 53.06806
1026. 53.26793

```
1033.  53.33522
1042.  53.74115
1049.  53.87373
1057.  54.25843
1065.  54.48571
1073.  54.58863
1081.  54.87012
1090.  55.20436
1098.  55.23332
1105.  55.25999
1113.  55.33283
1121.  55.51224
1131.  55.65775
1137.  56.51654
1150.  56.51654
1157.  56.51654

188. graph err2 if time==43, histogram bin(20) normal freq
  > xlab(-1.0,-0.9,-0.8,-0.7,-0.6,-0.5,-0.4,-0.3,-0.2,-0.1,0,0.1,0.2,0.3,0.4,0.5,
  > 0.6,0.7,0.8, 0.9,1.0);

.
end of do-file

.
```

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College Station, Texas 77840
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Statistics/Data Analysis

```
1. set more 1;

2. gen annex1 = counindx == 54| counindx == 67| counindx == 72| counindx == 95|
 > counindx == 116| counindx == 117| counindx == 118| counindx == 120| counindx
 > == 121|
 > counindx == 122| counindx == 123| counindx == 124| counindx == 125| counindx
 > == 126|
 > counindx == 127| counindx == 128| counindx == 129| counindx == 130| counindx
 > == 131|
 > counindx == 133| counindx == 134| counindx == 135| counindx == 136| counindx
 > == 137|
 > counindx == 138| counindx == 139| counindx == 140| counindx == 142| counindx
 > == 143|
 > counindx == 144| counindx == 145| counindx == 147;

3. generate lgdp15 = ln(gdp_ppp[_n-5]);
(1501 missing values generated)

4. generate lgdp16 = ln(gdp_ppp[_n-6]);
(1502 missing values generated)

5. generate lpop15 = ln(pop[_n-5]);
(1466 missing values generated)

6. generate dev = popgdp[_n+20] if time==1;
(6403 missing values generated)

7. replace dev = popgdp[_n+19] if time==2;
(133 real changes made)

8. replace dev = popgdp[_n+18] if time==3;
(133 real changes made)

9. replace dev = popgdp[_n+17] if time==4;
(133 real changes made)

10. replace dev = popgdp[_n+16] if time==5;
(133 real changes made)

11. replace dev = popgdp[_n+15] if time==6;
(133 real changes made)

12. replace dev = popgdp[_n+14] if time==7;
(133 real changes made)

13. replace dev = popgdp[_n+13] if time==8;
(133 real changes made)

14. replace dev = popgdp[_n+12] if time==9;
(133 real changes made)

15. replace dev = popgdp[_n+11] if time==10;
```

(133 real changes made)

16. **replace dev = popgdp[_n+10] if time==11;**
(133 real changes made)

17. **replace dev = popgdp[_n+9] if time==12;**
(133 real changes made)

18. **replace dev = popgdp[_n+8] if time==13;**
(133 real changes made)

19. **replace dev = popgdp[_n+7] if time==14;**
(133 real changes made)

20. **replace dev = popgdp[_n+6] if time==15;**
(133 real changes made)

21. **replace dev = popgdp[_n+5] if time==16;**
(133 real changes made)

22. **replace dev = popgdp[_n+4] if time==17;**
(133 real changes made)

23. **replace dev = popgdp[_n+3] if time==18;**
(133 real changes made)

24. **replace dev = popgdp[_n+2] if time==19;**
(133 real changes made)

25. **replace dev = popgdp[_n+1] if time==20;**
(133 real changes made)

26. **replace dev = popgdp if time==21;**
(133 real changes made)

27. **replace dev = popgdp[_n-1] if time==22;**
(133 real changes made)

28. **replace dev = popgdp[_n-2] if time==23;**
(133 real changes made)

29. **replace dev = popgdp[_n-3] if time==24;**
(133 real changes made)

30. **replace dev = popgdp[_n-4] if time==25;**
(133 real changes made)

31. **replace dev = popgdp[_n-5] if time==26;**
(133 real changes made)

32. **replace dev = popgdp[_n-6] if time==27;**
(133 real changes made)

33. **replace dev = popgdp[_n-7] if time==28;**

133 real changes made)

34. **replace dev = popgdp[_n-8] if time==29;**
(133 real changes made)

35. **replace dev = popgdp[_n-9] if time==30;**
(133 real changes made)

36. **replace dev = popgdp[_n-10] if time==31;**
(133 real changes made)

37. **replace dev = popgdp[_n-11] if time==32;**
(133 real changes made)

38. **replace dev = popgdp[_n-12] if time==33;**
(133 real changes made)

39. **replace dev = popgdp[_n-13] if time==34;**
(133 real changes made)

40. **replace dev = popgdp[_n-14] if time==35;**
(133 real changes made)

41. **replace dev = popgdp[_n-15] if time==36;**
(133 real changes made)

42. **replace dev = popgdp[_n-16] if time==37;**
(133 real changes made)

43. **replace dev = popgdp[_n-17] if time==38;**
(133 real changes made)

44. **replace dev = popgdp[_n-18] if time==39;**
(133 real changes made)

45. **replace dev = popgdp[_n-19] if time==40;**
(133 real changes made)

46. **replace dev = popgdp[_n-20] if time==41;**
(133 real changes made)

47. **replace dev = popgdp[_n-21] if time==42;**
(133 real changes made)

48. **replace dev = popgdp[_n-22] if time==43;**
(133 real changes made)

49. **generate dev2 = popgdp[_n+30] if time==1;**
(6394 missing values generated)

50. **replace dev2 = popgdp[_n+29] if time==2;**
142 real changes made)

51. **replace dev2 = popgdp[_n+28] if time==3;**

142 real changes made)

52. **replace dev2 = popgdp[_n+27] if time==4;**
(142 real changes made)

53. **replace dev2 = popgdp[_n+26] if time==5;**
(142 real changes made)

54. **replace dev2 = popgdp[_n+25] if time==6;**
(142 real changes made)

55. **replace dev2 = popgdp[_n+24] if time==7;**
(142 real changes made)

56. **replace dev2 = popgdp[_n+23] if time==8;**
(142 real changes made)

57. **replace dev2 = popgdp[_n+22] if time==9;**
(142 real changes made)

58. **replace dev2 = popgdp[_n+21] if time==10;**
(142 real changes made)

59. **replace dev2 = popgdp[_n+20] if time==11;**
(142 real changes made)

0. **replace dev2 = popgdp[_n+19] if time==12;**
(142 real changes made)

61. **replace dev2 = popgdp[_n+18] if time==13;**
(142 real changes made)

62. **replace dev2 = popgdp[_n+17] if time==14;**
(142 real changes made)

63. **replace dev2 = popgdp[_n+16] if time==15;**
(142 real changes made)

64. **replace dev2 = popgdp[_n+15] if time==16;**
(142 real changes made)

65. **replace dev2 = popgdp[_n+14] if time==17;**
(142 real changes made)

66. **replace dev2 = popgdp[_n+13] if time==18;**
(142 real changes made)

67. **replace dev2 = popgdp[_n+12] if time==19;**
(142 real changes made)

68. **replace dev2 = popgdp[_n+11] if time==20;**
142 real changes made)

69. **replace dev2 = popgdp[_n+10] if time==21;**

(142 real changes made)

70. **replace dev2 = popgdp[_n+9] if time==22;**
(142 real changes made)

71. **replace dev2 = popgdp[_n+8] if time==23;**
(142 real changes made)

72. **replace dev2 = popgdp[_n+7] if time==24;**
(142 real changes made)

73. **replace dev2 = popgdp[_n+6] if time==25;**
(142 real changes made)

74. **replace dev2 = popgdp[_n+5] if time==26;**
(142 real changes made)

75. **replace dev2 = popgdp[_n+4] if time==27;**
(142 real changes made)

76. **replace dev2 = popgdp[_n+3] if time==28;**
(142 real changes made)

77. **replace dev2 = popgdp[_n+2] if time==29;**
(142 real changes made)

78. **replace dev2 = popgdp[_n+1] if time==30;**
(142 real changes made)

79. **replace dev2 = popgdp if time==31;**
(142 real changes made)

80. **replace dev2 = popgdp[_n-1] if time==32;**
(142 real changes made)

81. **replace dev2 = popgdp[_n-2] if time==33;**
(142 real changes made)

82. **replace dev2 = popgdp[_n-3] if time==34;**
(142 real changes made)

83. **replace dev2 = popgdp[_n-4] if time==35;**
(142 real changes made)

84. **replace dev2 = popgdp[_n-5] if time==36;**
(142 real changes made)

85. **replace dev2 = popgdp[_n-6] if time==37;**
(142 real changes made)

86. **replace dev2 = popgdp[_n-7] if time==38;**
(142 real changes made)

87. **replace dev2 = popgdp[_n-8] if time==39;**

142 real changes made)

88. **replace dev2 = popgdp[_n-9] if time==40;**
(142 real changes made)

89. **replace dev2 = popgdp[_n-10] if time==41;**
(142 real changes made)

90. **replace dev2 = popgdp[_n-11] if time==42;**
(142 real changes made)

91. **replace dev2 = popgdp[_n-12] if time==43;**
(142 real changes made)

92. **gen devdum = dev >= 4000;**

93. **gen devduma = dev2 >=1610;**

94. **gen devdumb = dev2 >=4500;**

95. **gen afrdum = counindx<=50;**

96. **gen afrdum2 = afrdum*lgdp15;**
(1501 missing values generated)

97. **gen namdum = counindx<=72;**

98. **replace namdum = 0 if counindx<=50;**
(2149 real changes made)

99. **gen namdum2 = namdum*lgdp15;**
(1501 missing values generated)

100. **gen samdum = counindx<=84;**

101. **replace samdum = 0 if counindx<=72;**
(3095 real changes made)

102. **gen samdum2 = samdum*lgdp15;**
(1501 missing values generated)

103. **gen asiadum = counindx<=115;**

104. **replace asiadum = 0 if counindx<=84;**
(3611 real changes made)

105. **gen asiadum2 = asiadum*lgdp15;**
(1501 missing values generated)

106. **gen eurodum = counindx<=144;**

107. **replace eurodum = 0 if counindx<=115;**
(4944 real changes made)

```
108. gen eurodum2 = eurodum*lgdpl5;
(1501 missing values generated)

109. gen ausdum = counindx<=152;

110. replace ausdum = 0 if counindx<=144;
(6191 real changes made)

111. gen ausdum2 = ausdum*lgdpl5;
(1501 missing values generated)

112. gen inv = (invest/100);
(1496 missing values generated)

113. generate la5emis = ln((totalcd + totalcd[_n-1] + totalcd[_n-2] + totalcd[_n-3
  > ] +
  > totalcd[_n-4])/5000);
(544 missing values generated)

114. gen devdum2 = (devdum*lgdpl5);
(1501 missing values generated)

115. gen devdum3a = (devduma*lgdpl5);
(1501 missing values generated)

116. gen devdum3b = (devdumb*lgdpl5);
(1501 missing values generated)

117. generate timesq = time*time;

118. gen trend = time;

119. gen trend2 = (trend*lgdpl5);
(1501 missing values generated)

120. drop if counindx==23;
(43 observations deleted)

121. drop if counindx==32;
(43 observations deleted)

122. drop if counindx==59;
(43 observations deleted)

123. drop if counindx==68;
(43 observations deleted)

124. drop if counindx==99;
(43 observations deleted)

125. drop if counindx==101;
(43 observations deleted)

126. drop if counindx==151;
```

(143 observations deleted)

127. **drop if time==42;**
(145 observations deleted)

128. **drop if time==41;**
(145 observations deleted)

129. **drop if time==40;**
(145 observations deleted)

130. **drop if time==39;**
(145 observations deleted)

131. **drop if time==37;**
(145 observations deleted)

132. **drop if time==36;**
(145 observations deleted)

133. **drop if time==35;**
(145 observations deleted)

134. **drop if time==34;**
(145 observations deleted)

135. **drop if time==32;**
(145 observations deleted)

136. **drop if time==31;**
(145 observations deleted)

137. **drop if time==30;**
(145 observations deleted)

138. **drop if time==29;**
(145 observations deleted)

139. **drop if time==27;**
(145 observations deleted)

140. **drop if time==26;**
(145 observations deleted)

141. **drop if time==25;**
(145 observations deleted)

142. **drop if time==24;**
(145 observations deleted)

143. **drop if time==22;**
(145 observations deleted)

144. **drop if time==21;**

(145 observations deleted)

```
145. drop if time==20;
(145 observations deleted)

146. drop if time==19;
(145 observations deleted)

147. drop if time==17;
(145 observations deleted)

148. drop if time==16;
(145 observations deleted)

149. drop if time==15;
(145 observations deleted)

150. drop if time==14;
(145 observations deleted)

151. drop if time==12;
(145 observations deleted)

152. drop if time==11;
(145 observations deleted)

153. drop if time==10;
(145 observations deleted)

154. drop if time==9;
(145 observations deleted)

155. drop if time==7;
(145 observations deleted)

156. drop if time==6;
(145 observations deleted)

157. drop if time==5;
(145 observations deleted)

158. drop if time==4;
(145 observations deleted)

159. drop if time==3;
(145 observations deleted)

160. drop if time==2;
(145 observations deleted)

161. drop if time==1;
(144 observations deleted)

162. set matsize 300;
```

```
. generate time2=1 if time==8;
(1015 missing values generated)

. replace time2=2 if time==13;
(145 real changes made)

. replace time2=3 if time==18;
(145 real changes made)

. replace time2=4 if time==23;
(145 real changes made)

. replace time2=5 if time==28;
(145 real changes made)

. replace time2=6 if time==33;
(145 real changes made)

. replace time2=7 if time==38;
(145 real changes made)

. replace time2=8 if time==43;
(145 real changes made)

. generate time2sq = time2*time2;

. tab counindx, generate(count);
```

counindx	Freq.	Percent	Cum.
1	8	0.69	0.69
2	8	0.69	1.38
3	8	0.69	2.07
4	8	0.69	2.76
5	8	0.69	3.45
6	8	0.69	4.14
7	8	0.69	4.83
8	8	0.69	5.52
9	8	0.69	6.21
10	8	0.69	6.90
11	8	0.69	7.59
12	8	0.69	8.28
13	8	0.69	8.97
14	8	0.69	9.66
15	8	0.69	10.34
16	8	0.69	11.03
17	8	0.69	11.72
18	8	0.69	12.41
19	8	0.69	13.10
20	8	0.69	13.79
21	8	0.69	14.48
22	8	0.69	15.17
24	8	0.69	15.86

25	8	0.69	16.55
26	8	0.69	17.24
27	8	0.69	17.93
28	8	0.69	18.62
29	8	0.69	19.31
30	8	0.69	20.00
31	8	0.69	20.69
33	8	0.69	21.38
34	8	0.69	22.07
35	8	0.69	22.76
36	8	0.69	23.45
37	8	0.69	24.14
38	8	0.69	24.83
39	8	0.69	25.52
40	8	0.69	26.21
41	8	0.69	26.90
42	8	0.69	27.59
43	8	0.69	28.28
44	8	0.69	28.97
45	8	0.69	29.66
46	8	0.69	30.34
47	8	0.69	31.03
48	8	0.69	31.72
49	8	0.69	32.41
50	8	0.69	33.10
51	8	0.69	33.79
52	8	0.69	34.48
53	8	0.69	35.17
54	8	0.69	35.86
55	8	0.69	36.55
56	8	0.69	37.24
57	8	0.69	37.93
58	8	0.69	38.62
60	8	0.69	39.31
61	8	0.69	40.00
62	8	0.69	40.69
63	8	0.69	41.38
64	8	0.69	42.07
65	8	0.69	42.76
66	8	0.69	43.45
67	8	0.69	44.14
69	8	0.69	44.83
70	8	0.69	45.52
71	8	0.69	46.21
72	8	0.69	46.90
73	8	0.69	47.59
74	8	0.69	48.28
75	8	0.69	48.97
76	8	0.69	49.66
77	8	0.69	50.34
78	8	0.69	51.03
79	8	0.69	51.72
80	8	0.69	52.41
81	8	0.69	53.10

82	8	0.69	53.79
83	8	0.69	54.48
84	8	0.69	55.17
85	8	0.69	55.86
86	8	0.69	56.55
87	8	0.69	57.24
88	8	0.69	57.93
89	8	0.69	58.62
90	8	0.69	59.31
91	8	0.69	60.00
92	8	0.69	60.69
93	8	0.69	61.38
94	8	0.69	62.07
95	8	0.69	62.76
96	8	0.69	63.45
97	8	0.69	64.14
98	8	0.69	64.83
100	8	0.69	65.52
102	8	0.69	66.21
103	8	0.69	66.90
104	8	0.69	67.59
105	8	0.69	68.28
106	8	0.69	68.97
107	8	0.69	69.66
108	8	0.69	70.34
109	8	0.69	71.03
110	8	0.69	71.72
111	8	0.69	72.41
112	8	0.69	73.10
113	8	0.69	73.79
114	8	0.69	74.48
115	8	0.69	75.17
116	8	0.69	75.86
117	8	0.69	76.55
118	8	0.69	77.24
119	8	0.69	77.93
120	8	0.69	78.62
121	8	0.69	79.31
122	8	0.69	80.00
123	8	0.69	80.69
124	8	0.69	81.38
125	8	0.69	82.07
126	8	0.69	82.76
127	8	0.69	83.45
128	8	0.69	84.14
129	8	0.69	84.83
130	8	0.69	85.52
131	8	0.69	86.21
132	8	0.69	86.90
133	8	0.69	87.59
134	8	0.69	88.28
135	8	0.69	88.97
136	8	0.69	89.66
137	8	0.69	90.34

138	8	0.69	91.03
139	8	0.69	91.72
140	8	0.69	92.41
141	8	0.69	93.10
142	8	0.69	93.79
143	8	0.69	94.48
144	8	0.69	95.17
145	8	0.69	95.86
146	8	0.69	96.55
147	8	0.69	97.24
148	8	0.69	97.93
149	8	0.69	98.62
150	8	0.69	99.31
152	8	0.69	100.00
Total	1160	100.00	

173. xtreg la5emis lgdpl5 lgdpl6 lpopl5 inv time if time<=42, fe i(counindx);

Fixed-effects (within) regression

sd(u_counindx)	=	1.458817	Number of obs = 767
sd(e_counindx_t)	=	.2680438	n = 140
sd(e_counindx_t + u_counindx)	=	1.483238	T-bar = 5.47857
corr(u_counindx, Xb)	=	-0.5137	R-sq within = 0.8059
			between = 0.7589
			overall = 0.7784
			F(5, 622) = 516.43
			Prob > F = 0.0000

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	1.042587	.1892236	5.510	0.000	.6709924	1.414182
lgdpl6	-.2581204	.190984	-1.352	0.177	-.633172	.1169311
lpopl5	.8490495	.1164016	7.294	0.000	.6204618	1.077637
inv	1.839143	.2442371	7.530	0.000	1.359514	2.318772
time	-.0009073	.003388	-0.268	0.789	-.0075606	.0057461
_cons	-14.50841	.9717289	-14.931	0.000	-16.41667	-12.60014
counindx	F(139,622) =	29.200	0.000	(140 categories)		

174. regress la5emis lgdpl5 lgdpl6 lpopl5 inv time count* if time<=42, noconstant
> ;

Source	SS	df	MS		
Model	5191.55248	145	35.8038102	Number of obs =	767
Residual	44.689136	622	.071847486	F(145, 622) =	498.33
Total	5236.24162	767	6.82691215	Prob > F =	0.0000
				R-squared =	0.9915
				Adj R-squared =	0.9895
				Root MSE =	.26804

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	1.042587	.1892236	5.510	0.000	.670992	1.414181
lgdpl6	-.2581202	.190984	-1.352	0.177	-.6331717	.1169313
lpopl5	.8490496	.1164016	7.294	0.000	.6204618	1.077637
inv	1.839143	.2442371	7.530	0.000	1.359514	2.318772
time	-.0009073	.003388	-0.268	0.789	-.0075606	.0057461
count1	-14.5738	1.070866	-13.609	0.000	-16.67675	-12.47085
count2	-14.33963	.9632505	-14.887	0.000	-16.23124	-12.44801
count3	-15.62463	.8699749	-17.960	0.000	-17.33307	-13.91619
count4	-13.097	.7206674	-18.173	0.000	-14.51224	-11.68177
count5	-16.45942	.9446632	-17.424	0.000	-18.31453	-14.6043
count6	-16.69568	.8881016	-18.799	0.000	-18.43972	-14.95164
count7	-15.52989	.9735689	-15.952	0.000	-17.44177	-13.61801
count8	-13.30411	.5840999	-22.777	0.000	-14.45116	-12.15707
count9	-15.5284	.823714	-18.852	0.000	-17.146	-13.9108
count10	-16.24152	.9006902	-18.032	0.000	-18.01028	-14.47276
count11	-13.97063	.5930902	-23.556	0.000	-15.13533	-12.80592
count12	-13.959	.7855812	-17.769	0.000	-15.50171	-12.41628
count13	-12.29203	.5926155	-20.742	0.000	-13.45579	-11.12826
count14	-14.99556	1.162843	-12.896	0.000	-17.27914	-12.71199
count15	-17.18486	1.128667	-15.226	0.000	-19.40132	-14.9684
count16	-12.24443	.7067813	-17.324	0.000	-13.63239	-10.85646
count17	-13.8485	.6663174	-20.784	0.000	-15.157	-12.53999
count18	-15.28856	1.003161	-15.240	0.000	-17.25855	-13.31856
count19	-14.8301	.9108372	-16.282	0.000	-16.61879	-13.04141
count20	-14.1266	.6854262	-20.610	0.000	-15.47263	-12.78057
count21	-15.00543	.9640416	-15.565	0.000	-16.8986	-13.11226
count22	-15.2904	1.029691	-14.850	0.000	-17.3125	-13.26831
count23	-13.07758	.7917441	-16.517	0.000	-14.63239	-11.52276
count24	-15.88574	.981046	-16.193	0.000	-17.8123	-13.95917
count25	-15.50776	.9261622	-16.744	0.000	-17.32655	-13.68898
count26	-16.13287	.939086	-17.179	0.000	-17.97703	-14.2887
count27	-13.98918	.7730774	-18.095	0.000	-15.50734	-12.47103
count28	-14.09446	.7449823	-18.919	0.000	-15.55744	-12.63147
count29	-15.22063	1.073519	-14.178	0.000	-17.32879	-13.11247
count30	-15.67427	1.022852	-15.324	0.000	-17.68293	-13.66561
count31	-15.94479	.9173419	-17.382	0.000	-17.74625	-14.14333
count32	-16.22121	1.221456	-13.280	0.000	-18.61988	-13.82253
count33	-13.11011	.6627245	-19.782	0.000	-14.41156	-11.80866
count34	-16.64288	.9048911	-18.392	0.000	-18.41989	-14.86586
count35	-14.72098	.9292376	-15.842	0.000	-16.5458	-12.89615
count36	-11.79152	.4201766	-28.063	0.000	-12.61666	-10.96638
count37	-15.01157	.872103	-17.213	0.000	-16.7242	-13.29895
count38	-16.0798	.9161181	-17.552	0.000	-17.87886	-14.28074
count39	-13.62997	1.13102	-12.051	0.000	-15.85106	-11.40889
count40	-16.10916	1.070972	-15.042	0.000	-18.21232	-14.006
count41	-13.23975	.6708456	-19.736	0.000	-14.55715	-11.92235
count42	-15.60182	1.064061	-14.663	0.000	-17.69141	-13.51223
count43	-14.68902	.826187	-17.779	0.000	-16.31147	-13.06657
count44	-14.28117	.9507732	-15.021	0.000	-16.14828	-12.41406
count45	-16.31044	1.007952	-16.182	0.000	-18.28984	-14.33104
count46	-15.84511	1.097801	-14.434	0.000	-18.00096	-13.68927
count47	-14.19056	.9251682	-15.338	0.000	-16.00739	-12.37373

count48	-13.60179	.9534085	-14.266	0.000	-15.47408	-11.7295
count49	-11.618	.6354938	-18.282	0.000	-12.86597	-10.37002
count50	-12.34979	.6092446	-20.271	0.000	-13.54621	-11.15336
count51	-12.40451	.5750999	-21.569	0.000	-13.53388	-11.27514
count52	-13.97156	1.147184	-12.179	0.000	-16.22438	-11.71874
count53	-14.14278	.8227302	-17.190	0.000	-15.75844	-12.52711
count54	(dropped)					
count55	-14.41737	.9273703	-15.547	0.000	-16.23852	-12.59621
count56	-14.81645	.9031734	-16.405	0.000	-16.59008	-13.04281
count57	-15.03606	.9526905	-15.783	0.000	-16.90694	-13.16518
count58	-15.78037	.9283222	-16.999	0.000	-17.60339	-13.95734
count59	-14.31753	.8638533	-16.574	0.000	-16.01395	-12.62111
count60	-13.06685	.8361088	-15.628	0.000	-14.70879	-11.42491
count61	-15.42423	1.230633	-12.534	0.000	-17.84093	-13.00753
count62	-14.29401	.8477482	-16.861	0.000	-15.95881	-12.62922
count63	-13.47528	.8071494	-16.695	0.000	-15.06035	-11.89021
count64	-13.26433	.8955226	-14.812	0.000	-15.02294	-11.50571
count65	(dropped)					
count66	(dropped)					
count67	-12.09643	.7775574	-15.557	0.000	-13.62339	-10.56947
count68	-15.28448	1.422482	-10.745	0.000	-18.07793	-12.49103
count69	-14.96382	1.153054	-12.978	0.000	-17.22817	-12.69947
count70	-14.70219	.9272594	-15.856	0.000	-16.52313	-12.88125
count71	-16.42798	1.29499	-12.686	0.000	-18.97107	-13.8849
count72	-14.41985	1.030708	-13.990	0.000	-16.44394	-12.39576
count73	-14.97178	1.114479	-13.434	0.000	-17.16037	-12.78318
count74	-14.8374	.9674825	-15.336	0.000	-16.73733	-12.93748
count75	-12.47344	.7014062	-17.783	0.000	-13.85086	-11.09603
count76	-14.85568	.8567838	-17.339	0.000	-16.53822	-13.17314
count77	-15.07701	1.06567	-14.148	0.000	-17.16975	-12.98426
count78	-11.55296	.6411279	-18.020	0.000	-12.81199	-10.29392
count79	-13.95661	.8967356	-15.564	0.000	-15.71761	-12.19561
count80	-13.86808	1.054513	-13.151	0.000	-15.93892	-11.79725
count81	-11.0921	.657849	-16.861	0.000	-12.38397	-9.800223
count82	-18.32387	1.249546	-14.664	0.000	-20.77771	-15.87003
count83	(dropped)					
count84	-16.68778	1.52903	-10.914	0.000	-19.69046	-13.68509
count85	-14.10088	.9392988	-15.012	0.000	-15.94546	-12.25629
count86	-17.46925	1.48841	-11.737	0.000	-20.39216	-14.54633
count87	-16.62757	1.308664	-12.706	0.000	-19.1975	-14.05763
count88	-14.8931	1.167248	-12.759	0.000	-17.18533	-12.60088
count89	-14.3253	1.038248	-13.798	0.000	-16.3642	-12.2864
count90	-13.33123	.901914	-14.781	0.000	-15.1024	-11.56007
count91	-15.73803	1.323673	-11.890	0.000	-18.33744	-13.13862
count92	-13.49603	.8357165	-16.149	0.000	-15.1372	-11.85486
count93	-14.93485	1.159657	-12.879	0.000	-17.21217	-12.65753
count94	-12.25048	.8539753	-14.345	0.000	-13.9275	-10.57345
count95	-14.79989	1.052596	-14.060	0.000	-16.86696	-12.73282
count96	-16.0494	1.126556	-14.246	0.000	-18.26172	-13.83709
count97	-17.60988	1.038504	-16.957	0.000	-19.64927	-15.57048
count98	-12.31531	.7536269	-16.341	0.000	-13.79527	-10.83535
count99	-16.18748	1.231759	-13.142	0.000	-18.60639	-13.76857
count100	-15.9262	1.17696	-13.532	0.000	-18.2375	-13.61491
count101	-10.74719	.6809071	-15.784	0.000	-12.08435	-9.410036

count102	-13.42084	1.007815	-13.317	0.000	-15.39997	-11.44171
count103	-12.64434	.8475648	-14.918	0.000	-14.30878	-10.97991
count104	-15.82318	1.04899	-15.084	0.000	-17.88317	-13.76319
count105	-14.38709	.9877179	-14.566	0.000	-16.32675	-12.44742
count106	-14.31323	1.06693	-13.415	0.000	-16.40845	-12.21801
count107	-16.16849	1.170526	-13.813	0.000	-18.46715	-13.86983
count108	-12.00525	.8363521	-14.354	0.000	-13.64767	-10.36283
count109	-15.2258	.9761308	-15.598	0.000	-17.14271	-13.30889
count110	-13.95967	1.021412	-13.667	0.000	-15.96551	-11.95384
count111	-13.52914	1.054484	-12.830	0.000	-15.59992	-11.45836
count112	-13.46563	1.022965	-13.163	0.000	-15.47451	-11.45675
count113	-12.70207	.7117188	-17.847	0.000	-14.09974	-11.30441
count114	-12.88742	1.072883	-12.012	0.000	-14.99434	-10.78051
count115	-13.42154	.9776003	-13.729	0.000	-15.34134	-11.50175
count116	-13.78973	.9650159	-14.290	0.000	-15.68481	-11.89464
count117	-15.10738	1.248287	-12.102	0.000	-17.55875	-12.65601
count118	-13.51623	1.097145	-12.319	0.000	-15.67079	-11.36168
count119	-14.841	1.268032	-11.704	0.000	-17.33114	-12.35085
count120	-14.33509	1.028922	-13.932	0.000	-16.35568	-12.31451
count121	-13.70837	1.036212	-13.229	0.000	-15.74327	-11.67347
count122	-11.52535	.5979394	-19.275	0.000	-12.69957	-10.35112
count123	-13.12075	.9115433	-14.394	0.000	-14.91083	-11.33068
count124	-15.59958	1.25099	-12.470	0.000	-18.05625	-13.1429
count125	-10.67505	.668854	-15.960	0.000	-11.98854	-9.361569
count126	-12.23232	.6346119	-19.275	0.000	-13.47856	-10.98608
count127	-14.07074	1.08758	-12.938	0.000	-16.20651	-11.93496
count128	-13.79392	.9456609	-14.587	0.000	-15.65099	-11.93684
count129	-13.96448	1.171797	-11.917	0.000	-16.26564	-11.66333
count130	-14.71084	1.030491	-14.276	0.000	-16.7345	-12.68718
count131	-13.04862	1.095767	-11.908	0.000	-15.20047	-10.89676
count132	-15.30615	1.191699	-12.844	0.000	-17.64639	-12.96591
count133	-13.95348	1.037702	-13.447	0.000	-15.99131	-11.91566
count134	-14.43248	1.005263	-14.357	0.000	-16.4066	-12.45836
count135	-15.5166	1.17704	-13.183	0.000	-17.82805	-13.20515
count136	-14.63199	1.26367	-11.579	0.000	-17.11356	-12.15041
count137	-15.49488	1.411779	-10.975	0.000	-18.26731	-12.72245
count138	-14.66134	1.118558	-13.107	0.000	-16.85795	-12.46474
count139	-13.91624	1.084041	-12.837	0.000	-16.04507	-11.78742
count140	-13.24874	.6898122	-19.206	0.000	-14.60338	-11.8941
count141	-13.58743	.9089222	-14.949	0.000	-15.37236	-11.8025
count142	-14.72131	.8633565	-17.051	0.000	-16.41676	-13.02586
count143	-12.81323	.6128841	-20.906	0.000	-14.0168	-11.60966
count144	(dropped)					
count145	-12.41633	.5650367	-21.974	0.000	-13.52594	-11.30672

175. predict pla5emis;
(288 missing values generated)

176. predict se_emis, stdf;
(288 missing values generated)

177. generate u = pla5emis-la5emis;
(305 missing values generated)

178. list coun year pla5emis la5emis u se_emis if counindx==88;

	coun	year	pla5emis	la5emis	u	se_emis
665.	CHINA	1962	.	5.11556	.	.
666.	CHINA	1992	6.604819	6.518021	.0867977	.2945373
667.	CHINA	1957	.	3.968974	.	.
668.	CHINA	1972	5.358066	5.294098	.0639677	.2938422
669.	CHINA	1987	6.270729	6.274206	-.0034776	.2939827
670.	CHINA	1967	4.829639	4.844869	-.0152292	.2944247
671.	CHINA	1982	5.948099	6.02307	-.0749712	.2939842
672.	CHINA	1977	5.763254	5.733543	.0297103	.293731

179. list coun year pla5emis la5emis u se_emis if counindx==90;

	coun	year	pla5emis	la5emis	u	se_emis
681.	INDIA	1992	5.033352	5.236049	-.2026968	.2875769
682.	INDIA	1957	3.336003	3.157894	.1781089	.287402
683.	INDIA	1972	3.959838	3.99889	-.039052	.2867701
684.	INDIA	1982	4.516047	4.575284	-.0592365	.2870614
685.	INDIA	1987	4.73937	4.901045	-.161675	.2872927
686.	INDIA	1967	3.850501	3.802467	.0480337	.2867501
687.	INDIA	1977	4.234917	4.255882	-.0209651	.286768
688.	INDIA	1962	3.56562	3.510835	.0547857	.2870766

180. list coun year pla5emis la5emis u se_emis if counindx==64;

	coun	year	pla5emis	la5emis	u	se_emis
481.	MEXICO	1992	4.521382	4.441646	.0797358	.2877591
482.	MEXICO	1957	2.350728	2.41135	-.0606217	.2877161
483.	MEXICO	1987	4.400739	4.338542	.0621963	.2880754
484.	MEXICO	1967	3.052479	3.050069	.0024097	.2867299

```
 >
485.            MEXICO      1962   2.690516   2.810968  -.1204512   .2871356
 >
486.            MEXICO      1972   3.479191   3.374826   .1043651   .2866323
 >
487.            MEXICO      1982   4.159761   4.248595  -.0888343   .2870426
 >
488.            MEXICO      1977   3.849259   3.748322   .1009364   .2868175
 >
```

```
181. gen err = (pla5emis - la5emis);
(305 missing values generated)

182. gen p5emis = exp(pla5emis);
(288 missing values generated)

183. gen a5emis = exp(la5emis);
(62 missing values generated)

184. gen err2 = (p5emis - a5emis)/a5emis;
(305 missing values generated)

185. gen sqerr = (pla5emis - la5emis)*(pla5emis - la5emis);
(305 missing values generated)

186. gen sumsqerr = sum(sqerr);

187. list sumsqerr if time==43;

      sumsqerr
  1.  .0278592
 11.  .2268274
 19.   1.09956
 29.  1.271599
 33.  1.394553
 41.  1.861521
 51.  2.179241
 59.  3.674781
 67.  4.031806
 75.  4.506284
 83.  4.924731
 91.  5.094386
101.  5.757044
105.  5.769032
113.  5.899064
122.   6.69351
131.  7.764256
138.  7.907327
145.  8.012939
153.  8.117802
163.  8.175197
169.  8.778386
178.  9.301862
186.  9.485755
```

194.	9.798563
203.	9.894072
209.	12.29862
217.	13.01105
225.	13.37202
234.	14.52979
242.	15.22436
249.	16.84259
257.	18.88071
266.	19.47573
274.	19.91117
282.	20.29139
291.	22.40787
299.	22.78704
305.	23.174
314.	23.40573
321.	23.74641
334.	24.34449
337.	24.34622
347.	24.56314
353.	24.73677
361.	26.67642
369.	27.77239
379.	27.92619
386.	27.99149
393.	27.99149
402.	28.23156
409.	28.51882
417.	28.79686
426.	28.90888
433.	28.9118
441.	29.20704
449.	29.37106
457.	29.55247
465.	29.81482
473.	29.95953
481.	30.56356
489.	30.61459
497.	31.26688
506.	31.52854
517.	31.61447
523.	31.61447
529.	31.61447
537.	32.05321
545.	32.22398
553.	32.29865
561.	32.68354
569.	32.87463
577.	33.19605
585.	33.47952
593.	33.98163
601.	34.18215
609.	34.64668
618.	34.91604

625. 35.09497
633. 35.71517
642. 37.43371
649. 38.0458
658. 40.14307
666. 40.1506
674. 40.21608
681. 40.28748
689. 40.37473
698. 40.43299
706. 40.6777
713. 41.36167
721. 41.73662
730. 41.86109
737. 42.23569
746. 42.36178
754. 42.36208
761. 42.38814
772. 42.62575
779. 42.74661
785. 42.87448
793. 43.05838
805. 43.33226
811. 43.33226
817. 43.88102
825. 45.23083
833. 45.68581
841. 45.79189
849. 45.96038
861. 46.77076
865. 46.77076
873. 46.95609
881. 47.39138
894. 47.8307
897. 47.95459
907. 48.56152
913. 48.66781
921. 48.70673
929. 49.67107
939. 50.0753
945. 50.07644
953. 50.34098
962. 51.05951
969. 51.38621
977. 52.14845
985. 52.21176
993. 53.12721
1001. 53.67414
1009. 53.90667
1017. 54.18544
1027. 54.34011
1033. 54.41285
1042. 54.65786
1049. 54.70295

```
1057.  55.06737
1065.  55.30544
1073.  55.39444
1081.  55.69985
1091.  56.06545
1097.  56.11429
1105.  56.17398
1113.  56.28242
1121.  56.43919
1131.  56.62209
1140.  57.49413
1150.  57.49413
1153.  57.49413
```

```
188. graph err2 if time==43, histogram bin(20) normal freq
  > xlab(-2.0,-1.0,-0.9,-0.8,-0.7,-0.6,,-0.5,-0.4,-0.3,-0.2,-0.1,0,0.1, 0.2,0.3,0
  > .4,0.5,0.6,0.7,0.8,
  > 0.9,1.0,2.0);
xlab() invalid
r(198);

end of do-file
r(198);
```

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702 University Drive East
College Station, Texas 77840
409-696-4600, fax 409-696-4601

Statistics/Data Analysis

```
1. set more 1;

2. gen annex1 = counindx == 54| counindx == 67| counindx == 72| counindx == 95|
 > counindx == 116| counindx == 117| counindx == 118| counindx == 120| counindx
 > == 121|
 > counindx == 122| counindx == 123| counindx == 124| counindx == 125| counindx
 > == 126|
 > counindx == 127| counindx == 128| counindx == 129| counindx == 130| counindx
 > == 131|
 > counindx == 133| counindx == 134| counindx == 135| counindx == 136| counindx
 > == 137|
 > counindx == 138| counindx == 139| counindx == 140| counindx == 142| counindx
 > == 143|
 > counindx == 144| counindx == 145| counindx == 147;

3. generate lgdp15 = ln(gdp_ppp[_n-5]);
(1501 missing values generated)

4. generate lgdp16 = ln(gdp_ppp[_n-6]);
(1502 missing values generated)

5. generate lpop15 = ln(pop[_n-5]);
(1466 missing values generated)

6. generate dev = popgdp[_n+20] if time==1;
(6403 missing values generated)

7. replace dev = popgdp[_n+19] if time==2;
(133 real changes made)

8. replace dev = popgdp[_n+18] if time==3;
(133 real changes made)

9. replace dev = popgdp[_n+17] if time==4;
(133 real changes made)

10. replace dev = popgdp[_n+16] if time==5;
(133 real changes made)

11. replace dev = popgdp[_n+15] if time==6;
(133 real changes made)

12. replace dev = popgdp[_n+14] if time==7;
(133 real changes made)

13. replace dev = popgdp[_n+13] if time==8;
(133 real changes made)

14. replace dev = popgdp[_n+12] if time==9;
(133 real changes made)

15. replace dev = popgdp[_n+11] if time==10;
```

(133 real changes made)

16. **replace dev = popgdp[_n+10] if time==11;**
(133 real changes made)

17. **replace dev = popgdp[_n+9] if time==12;**
(133 real changes made)

18. **replace dev = popgdp[_n+8] if time==13;**
(133 real changes made)

19. **replace dev = popgdp[_n+7] if time==14;**
(133 real changes made)

20. **replace dev = popgdp[_n+6] if time==15;**
(133 real changes made)

21. **replace dev = popgdp[_n+5] if time==16;**
(133 real changes made)

22. **replace dev = popgdp[_n+4] if time==17;**
(133 real changes made)

23. **replace dev = popgdp[_n+3] if time==18;**
(133 real changes made)

24. **replace dev = popgdp[_n+2] if time==19;**
(133 real changes made)

25. **replace dev = popgdp[_n+1] if time==20;**
(133 real changes made)

26. **replace dev = popgdp if time==21;**
(133 real changes made)

27. **replace dev = popgdp[_n-1] if time==22;**
(133 real changes made)

28. **replace dev = popgdp[_n-2] if time==23;**
(133 real changes made)

29. **replace dev = popgdp[_n-3] if time==24;**
(133 real changes made)

30. **replace dev = popgdp[_n-4] if time==25;**
(133 real changes made)

31. **replace dev = popgdp[_n-5] if time==26;**
(133 real changes made)

32. **replace dev = popgdp[_n-6] if time==27;**
(133 real changes made)

33. **replace dev = popgdp[_n-7] if time==28;**

(133 real changes made)

34. **replace dev = popgdp[_n-8] if time==29;**
(133 real changes made)

35. **replace dev = popgdp[_n-9] if time==30;**
(133 real changes made)

36. **replace dev = popgdp[_n-10] if time==31;**
(133 real changes made)

37. **replace dev = popgdp[_n-11] if time==32;**
(133 real changes made)

38. **replace dev = popgdp[_n-12] if time==33;**
(133 real changes made)

39. **replace dev = popgdp[_n-13] if time==34;**
(133 real changes made)

40. **replace dev = popgdp[_n-14] if time==35;**
(133 real changes made)

41. **replace dev = popgdp[_n-15] if time==36;**
(133 real changes made)

42. **replace dev = popgdp[_n-16] if time==37;**
(133 real changes made)

43. **replace dev = popgdp[_n-17] if time==38;**
(133 real changes made)

44. **replace dev = popgdp[_n-18] if time==39;**
(133 real changes made)

45. **replace dev = popgdp[_n-19] if time==40;**
(133 real changes made)

46. **replace dev = popgdp[_n-20] if time==41;**
(133 real changes made)

47. **replace dev = popgdp[_n-21] if time==42;**
(133 real changes made)

48. **replace dev = popgdp[_n-22] if time==43;**
(133 real changes made)

49. **generate dev2 = popgdp[_n+30] if time==1;**
(6394 missing values generated)

50. **replace dev2 = popgdp[_n+29] if time==2;**
(142 real changes made)

51. **replace dev2 = popgdp[_n+28] if time==3;**

(142 real changes made)

52. **replace dev2 = popgdp[_n+27] if time==4;**
(142 real changes made)

53. **replace dev2 = popgdp[_n+26] if time==5;**
(142 real changes made)

54. **replace dev2 = popgdp[_n+25] if time==6;**
(142 real changes made)

55. **replace dev2 = popgdp[_n+24] if time==7;**
(142 real changes made)

56. **replace dev2 = popgdp[_n+23] if time==8;**
(142 real changes made)

57. **replace dev2 = popgdp[_n+22] if time==9;**
(142 real changes made)

58. **replace dev2 = popgdp[_n+21] if time==10;**
(142 real changes made)

59. **replace dev2 = popgdp[_n+20] if time==11;**
(142 real changes made)

60. **replace dev2 = popgdp[_n+19] if time==12;**
(142 real changes made)

61. **replace dev2 = popgdp[_n+18] if time==13;**
(142 real changes made)

62. **replace dev2 = popgdp[_n+17] if time==14;**
(142 real changes made)

63. **replace dev2 = popgdp[_n+16] if time==15;**
(142 real changes made)

64. **replace dev2 = popgdp[_n+15] if time==16;**
(142 real changes made)

65. **replace dev2 = popgdp[_n+14] if time==17;**
(142 real changes made)

66. **replace dev2 = popgdp[_n+13] if time==18;**
(142 real changes made)

67. **replace dev2 = popgdp[_n+12] if time==19;**
(142 real changes made)

68. **replace dev2 = popgdp[_n+11] if time==20;**
(142 real changes made)

69. **replace dev2 = popgdp[_n+10] if time==21;**

(142 real changes made)

70. **replace dev2 = popgdp[_n+9] if time==22;**
(142 real changes made)

71. **replace dev2 = popgdp[_n+8] if time==23;**
(142 real changes made)

72. **replace dev2 = popgdp[_n+7] if time==24;**
(142 real changes made)

73. **replace dev2 = popgdp[_n+6] if time==25;**
(142 real changes made)

74. **replace dev2 = popgdp[_n+5] if time==26;**
(142 real changes made)

75. **replace dev2 = popgdp[_n+4] if time==27;**
(142 real changes made)

76. **replace dev2 = popgdp[_n+3] if time==28;**
(142 real changes made)

77. **replace dev2 = popgdp[_n+2] if time==29;**
(142 real changes made)

78. **replace dev2 = popgdp[_n+1] if time==30;**
(142 real changes made)

79. **replace dev2 = popgdp if time==31;**
(142 real changes made)

80. **replace dev2 = popgdp[_n-1] if time==32;**
(142 real changes made)

81. **replace dev2 = popgdp[_n-2] if time==33;**
(142 real changes made)

82. **replace dev2 = popgdp[_n-3] if time==34;**
(142 real changes made)

83. **replace dev2 = popgdp[_n-4] if time==35;**
(142 real changes made)

84. **replace dev2 = popgdp[_n-5] if time==36;**
(142 real changes made)

85. **replace dev2 = popgdp[_n-6] if time==37;**
(142 real changes made)

86. **replace dev2 = popgdp[_n-7] if time==38;**
(142 real changes made)

87. **replace dev2 = popgdp[_n-8] if time==39;**

(142 real changes made)

88. **replace dev2 = popgdp[_n-9] if time==40;**
(142 real changes made)

89. **replace dev2 = popgdp[_n-10] if time==41;**
(142 real changes made)

90. **replace dev2 = popgdp[_n-11] if time==42;**
(142 real changes made)

91. **replace dev2 = popgdp[_n-12] if time==43;**
(142 real changes made)

92. **gen devdum = dev >= 4000;**

93. **gen devduma = dev2 >=1610;**

94. **gen devdumb = dev2 >=4500;**

95. **gen afrdum = counindx<=50;**

96. **gen afrdum2 = afrdum*lgdp15;**
(1501 missing values generated)

97. **gen namdum = counindx<=72;**

98. **replace namdum = 0 if counindx<=50;**
(2149 real changes made)

99. **gen namdum2 = namdum*lgdp15;**
(1501 missing values generated)

100. **gen samdum = counindx<=84;**

101. **replace samdum = 0 if counindx<=72;**
(3095 real changes made)

102. **gen samdum2 = samdum*lgdp15;**
(1501 missing values generated)

103. **gen asiadum = counindx<=115;**

104. **replace asiadum = 0 if counindx<=84;**
(3611 real changes made)

105. **gen asiadum2 = asiadum*lgdp15;**
(1501 missing values generated)

106. **gen eurodum = counindx<=144;**

107. **replace eurodum = 0 if counindx<=115;**
(4944 real changes made)

```
108. gen eurodum2 = eurodum*lgdpl5;
(1501 missing values generated)

109. gen ausdum = counindx<=152;

110. replace ausdum = 0 if counindx<=144;
(6191 real changes made)

111. gen ausdum2 = ausdum*lgdpl5;
(1501 missing values generated)

112. gen inv = (invest/100);
(1496 missing values generated)

113. generate la5emis = ln((totalcd + totalcd[_n-1] + totalcd[_n-2] + totalcd[_n-3
  > ] +
  > totalcd[_n-4])/5000);
(544 missing values generated)

114. gen devdum2 = (devdum*lgdpl5);
(1501 missing values generated)

115. gen devdum3a = (devduma*lgdpl5);
(1501 missing values generated)

116. gen devdum3b = (devdumb*lgdpl5);
(1501 missing values generated)

117. generate timesq = time*time;

118. gen trend = time;

119. gen trend2 = (trend*lgdpl5);
(1501 missing values generated)

120. drop if counindx==23;
(43 observations deleted)

121. drop if counindx==32;
(43 observations deleted)

122. drop if counindx==59;
(43 observations deleted)

123. drop if counindx==68;
(43 observations deleted)

124. drop if counindx==99;
(43 observations deleted)

125. drop if counindx==101;
(43 observations deleted)

126. drop if counindx==151;
```

(143 observations deleted)

127. drop if time==42;
(145 observations deleted)

128. drop if time==41;
(145 observations deleted)

129. drop if time==40;
(145 observations deleted)

130. drop if time==39;
(145 observations deleted)

131. drop if time==37;
(145 observations deleted)

132. drop if time==36;
(145 observations deleted)

133. drop if time==35;
(145 observations deleted)

134. drop if time==34;
(145 observations deleted)

135. drop if time==32;
(145 observations deleted)

136. drop if time==31;
(145 observations deleted)

137. drop if time==30;
(145 observations deleted)

138. drop if time==29;
(145 observations deleted)

139. drop if time==27;
(145 observations deleted)

140. drop if time==26;
(145 observations deleted)

141. drop if time==25;
(145 observations deleted)

142. drop if time==24;
(145 observations deleted)

143. drop if time==22;
(145 observations deleted)

144. drop if time==21;

(145 observations deleted)

145. drop if time==20;
(145 observations deleted)

146. drop if time==19;
(145 observations deleted)

147. drop if time==17;
(145 observations deleted)

148. drop if time==16;
(145 observations deleted)

149. drop if time==15;
(145 observations deleted)

150. drop if time==14;
(145 observations deleted)

151. drop if time==12;
(145 observations deleted)

152. drop if time==11;
(145 observations deleted)

153. drop if time==10;
(145 observations deleted)

154. drop if time==9;
(145 observations deleted)

155. drop if time==7;
(145 observations deleted)

156. drop if time==6;
(145 observations deleted)

157. drop if time==5;
(145 observations deleted)

158. drop if time==4;
(145 observations deleted)

159. drop if time==3;
(145 observations deleted)

160. drop if time==2;
(145 observations deleted)

161. drop if time==1;
(144 observations deleted)

162. set matsize 300;

163. generate time2=1 if time==8;
(1015 missing values generated)

164. replace time2=2 if time==13;
(145 real changes made)

165. replace time2=3 if time==18;
(145 real changes made)

166. replace time2=4 if time==23;
(145 real changes made)

167. replace time2=5 if time==28;
(145 real changes made)

168. replace time2=6 if time==33;
(145 real changes made)

169. replace time2=7 if time==38;
(145 real changes made)

170. replace time2=8 if time==43;
(145 real changes made)

171. generate time2sq = time2*time2;

172. tab counindx, generate(count);

counindx	Freq.	Percent	Cum.
1	8	0.69	0.69
2	8	0.69	1.38
3	8	0.69	2.07
4	8	0.69	2.76
5	8	0.69	3.45
6	8	0.69	4.14
7	8	0.69	4.83
8	8	0.69	5.52
9	8	0.69	6.21
10	8	0.69	6.90
11	8	0.69	7.59
12	8	0.69	8.28
13	8	0.69	8.97
14	8	0.69	9.66
15	8	0.69	10.34
16	8	0.69	11.03
17	8	0.69	11.72
18	8	0.69	12.41
19	8	0.69	13.10
20	8	0.69	13.79
21	8	0.69	14.48
22	8	0.69	15.17
24	8	0.69	15.86

25	8	0.69	16.55
26	8	0.69	17.24
27	8	0.69	17.93
28	8	0.69	18.62
29	8	0.69	19.31
30	8	0.69	20.00
31	8	0.69	20.69
33	8	0.69	21.38
34	8	0.69	22.07
35	8	0.69	22.76
36	8	0.69	23.45
37	8	0.69	24.14
38	8	0.69	24.83
39	8	0.69	25.52
40	8	0.69	26.21
41	8	0.69	26.90
42	8	0.69	27.59
43	8	0.69	28.28
44	8	0.69	28.97
45	8	0.69	29.66
46	8	0.69	30.34
47	8	0.69	31.03
48	8	0.69	31.72
49	8	0.69	32.41
50	8	0.69	33.10
51	8	0.69	33.79
52	8	0.69	34.48
53	8	0.69	35.17
54	8	0.69	35.86
55	8	0.69	36.55
56	8	0.69	37.24
57	8	0.69	37.93
58	8	0.69	38.62
60	8	0.69	39.31
61	8	0.69	40.00
62	8	0.69	40.69
63	8	0.69	41.38
64	8	0.69	42.07
65	8	0.69	42.76
66	8	0.69	43.45
67	8	0.69	44.14
69	8	0.69	44.83
70	8	0.69	45.52
71	8	0.69	46.21
72	8	0.69	46.90
73	8	0.69	47.59
74	8	0.69	48.28
75	8	0.69	48.97
76	8	0.69	49.66
77	8	0.69	50.34
78	8	0.69	51.03
79	8	0.69	51.72
80	8	0.69	52.41
81	8	0.69	53.10

82	8	0.69	53.79
83	8	0.69	54.48
84	8	0.69	55.17
85	8	0.69	55.86
86	8	0.69	56.55
87	8	0.69	57.24
88	8	0.69	57.93
89	8	0.69	58.62
90	8	0.69	59.31
91	8	0.69	60.00
92	8	0.69	60.69
93	8	0.69	61.38
94	8	0.69	62.07
95	8	0.69	62.76
96	8	0.69	63.45
97	8	0.69	64.14
98	8	0.69	64.83
100	8	0.69	65.52
102	8	0.69	66.21
103	8	0.69	66.90
104	8	0.69	67.59
105	8	0.69	68.28
106	8	0.69	68.97
107	8	0.69	69.66
108	8	0.69	70.34
109	8	0.69	71.03
110	8	0.69	71.72
111	8	0.69	72.41
112	8	0.69	73.10
113	8	0.69	73.79
114	8	0.69	74.48
115	8	0.69	75.17
116	8	0.69	75.86
117	8	0.69	76.55
118	8	0.69	77.24
119	8	0.69	77.93
120	8	0.69	78.62
121	8	0.69	79.31
122	8	0.69	80.00
123	8	0.69	80.69
124	8	0.69	81.38
125	8	0.69	82.07
126	8	0.69	82.76
127	8	0.69	83.45
128	8	0.69	84.14
129	8	0.69	84.83
130	8	0.69	85.52
131	8	0.69	86.21
132	8	0.69	86.90
133	8	0.69	87.59
134	8	0.69	88.28
135	8	0.69	88.97
136	8	0.69	89.66
137	8	0.69	90.34

```
       138 |          8        0.69       91.03
       139 |          8        0.69       91.72
       140 |          8        0.69       92.41
       141 |          8        0.69       93.10
       142 |          8        0.69       93.79
       143 |          8        0.69       94.48
       144 |          8        0.69       95.17
       145 |          8        0.69       95.86
       146 |          8        0.69       96.55
       147 |          8        0.69       97.24
       148 |          8        0.69       97.93
       149 |          8        0.69       98.62
       150 |          8        0.69       99.31
       152 |          8        0.69      100.00
-----------+-----------------------------------
     Total |       1160      100.00
```

173. xtreg la5emis lgdpl5 lgdpl6 lpopl5 inv time2 if time<=42, fe i(counindx);

```
                                              Fixed-effects (within) regression
sd(u_counindx)                 =  1.458817    Number of obs      =       767
sd(e_counindx_t)               =  .2680438    n                  =       140
sd(e_counindx_t + u_counindx)= 1.483238       T-bar              =   5.47857

corr(u_counindx, Xb)           =   -0.5137    R-sq within        =    0.8059
                                              between            =    0.7589
                                              overall            =    0.7784

                                              F(  5,    622)     =    516.43
                                              Prob > F           =    0.0000
```

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	1.042587	.1892236	5.510	0.000	.6709924	1.414182
lgdpl6	-.2581205	.190984	-1.352	0.177	-.633172	.1169311
lpopl5	.8490495	.1164016	7.294	0.000	.6204618	1.077637
inv	1.839143	.2442371	7.530	0.000	1.359514	2.318772
time2	-.0045363	.0169401	-0.268	0.789	-.037803	.0287304
_cons	-14.51113	.9800266	-14.807	0.000	-16.43569	-12.58657
counindx	F(139,622) =	29.200	0.000	(140 categories)		

174. regress la5emis lgdpl5 lgdpl6 lpopl5 inv time2 count* if time<=42, noconstan
> t;

```
  Source |       SS       df       MS                  Number of obs =     767
---------+------------------------------               F(145,    622) =  498.33
   Model |  5191.55248    145  35.8038102               Prob > F      =  0.0000
Residual |   44.689136    622  .071847486               R-squared     =  0.9915
---------+------------------------------               Adj R-squared =  0.9895
   Total |  5236.24162    767  6.82691215               Root MSE      =  .26804
```

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	1.042587	.1892236	5.510	0.000	.670992	1.414181
lgdpl6	-.2581202	.190984	-1.352	0.177	-.6331717	.1169313
lpopl5	.8490496	.1164016	7.294	0.000	.6204618	1.077637
inv	1.839143	.2442371	7.530	0.000	1.359514	2.318772
time2	-.0045363	.0169401	-0.268	0.789	-.037803	.0287304
count1	-14.57652	1.079062	-13.509	0.000	-16.69556	-12.45747
count2	-14.34235	.9712001	-14.768	0.000	-16.24958	-12.43512
count3	-15.62735	.8779466	-17.800	0.000	-17.35145	-13.90325
count4	-13.09973	.7284302	-17.984	0.000	-14.53021	-11.66925
count5	-16.46214	.9523507	-17.286	0.000	-18.33235	-14.59193
count6	-16.69841	.8958009	-18.641	0.000	-18.45757	-14.93925
count7	-15.53261	.9815052	-15.825	0.000	-17.46008	-13.60515
count8	-13.30684	.5913939	-22.501	0.000	-14.46821	-12.14547
count9	-15.53112	.8314906	-18.679	0.000	-17.16399	-13.89825
count10	-16.24424	.9085054	-17.880	0.000	-18.02835	-14.46013
count11	-13.97335	.6004849	-23.270	0.000	-15.15257	-12.79412
count12	-13.96172	.7936046	-17.593	0.000	-15.52019	-12.40325
count13	-12.29475	.6002731	-20.482	0.000	-13.47355	-11.11594
count14	-14.99829	1.170983	-12.808	0.000	-17.29785	-12.69873
count15	-17.18759	1.136464	-15.124	0.000	-19.41936	-14.95581
count16	-12.24715	.715062	-17.127	0.000	-13.65138	-10.84292
count17	-13.85122	.6739775	-20.551	0.000	-15.17476	-12.52767
count18	-15.29128	1.011183	-15.122	0.000	-17.27703	-13.30553
count19	-14.83282	.918656	-16.146	0.000	-16.63687	-13.02878
count20	-14.12932	.6929744	-20.389	0.000	-15.49017	-12.76846
count21	-15.00815	.9721557	-15.438	0.000	-16.91725	-13.09904
count22	-15.29313	1.037672	-14.738	0.000	-17.33089	-13.25536
count23	-13.0803	.7996005	-16.359	0.000	-14.65054	-11.51006
count24	-15.88846	.9890605	-16.064	0.000	-17.83076	-13.94616
count25	-15.51048	.9338389	-16.609	0.000	-17.34434	-13.67663
count26	-16.13559	.9468194	-17.042	0.000	-17.99494	-14.27624
count27	-13.99191	.7808895	-17.918	0.000	-15.52541	-12.45841
count28	-14.09718	.7533652	-18.712	0.000	-15.57663	-12.61773
count29	-15.22335	1.081669	-14.074	0.000	-17.34752	-13.09919
count30	-15.67699	1.03092	-15.207	0.000	-17.70149	-13.65249
count31	-15.94751	.9251775	-17.237	0.000	-17.76436	-14.13066
count32	-16.22393	1.229534	-13.195	0.000	-18.63847	-13.80939
count33	-13.11283	.6707221	-19.550	0.000	-14.42999	-11.79568
count34	-16.6456	.912687	-18.238	0.000	-18.43792	-14.85328
count35	-14.7237	.9372495	-15.709	0.000	-16.56425	-12.88314
count36	-11.79424	.4277613	-27.572	0.000	-12.63427	-10.95421
count37	-15.0143	.8800718	-17.060	0.000	-16.74257	-13.28602
count38	-16.08252	.9240425	-17.405	0.000	-17.89715	-14.2679
count39	-13.6327	1.139376	-11.965	0.000	-15.87019	-11.39521
count40	-16.11188	1.078865	-14.934	0.000	-18.23054	-13.99322
count41	-13.24247	.6789107	-19.505	0.000	-14.57571	-11.90924
count42	-15.60454	1.071644	-14.561	0.000	-17.70902	-13.50006
count43	-14.69174	.8338484	-17.619	0.000	-16.32924	-13.05424
count44	-14.28389	.9588962	-14.896	0.000	-16.16696	-12.40083
count45	-16.31317	1.015911	-16.058	0.000	-18.3082	-14.31813
count46	-15.84784	1.105739	-14.332	0.000	-18.01927	-13.6764
count47	-14.19328	.9331011	-15.211	0.000	-16.02569	-12.36087

count48	-13.60451	.9613765	-14.151	0.000	-15.49245	-11.71657
count49	-11.62072	.6433451	-18.063	0.000	-12.88411	-10.35733
count50	-12.35251	.6175836	-20.001	0.000	-13.56531	-11.13971
count51	-12.40723	.582348	-21.306	0.000	-13.55084	-11.26362
count52	-13.97428	1.155801	-12.091	0.000	-16.24403	-11.70454
count53	-14.1455	.8310198	-17.022	0.000	-15.77744	-12.51355
count54	(dropped)					
count55	-14.42009	.9355341	-15.414	0.000	-16.25728	-12.5829
count56	-14.81917	.91137	-16.260	0.000	-16.6089	-13.02943
count57	-15.03878	.9609402	-15.650	0.000	-16.92586	-13.1517
count58	-15.78309	.9362694	-16.857	0.000	-17.62172	-13.94446
count59	-14.32025	.8719225	-16.424	0.000	-16.03252	-12.60798
count60	-13.06957	.8443187	-15.479	0.000	-14.72763	-11.41151
count61	-15.42695	1.239054	-12.451	0.000	-17.86019	-12.99372
count62	-14.29673	.8559679	-16.702	0.000	-15.97767	-12.6158
count63	-13.478	.8153774	-16.530	0.000	-15.07923	-11.87678
count64	-13.26705	.9039643	-14.677	0.000	-15.04224	-11.49186
count65	(dropped)					
count66	(dropped)					
count67	-12.09915	.7861458	-15.390	0.000	-13.64297	-10.55533
count68	-15.2872	1.431106	-10.682	0.000	-18.09759	-12.47682
count69	-14.96654	1.161551	-12.885	0.000	-17.24758	-12.68551
count70	-14.70491	.9354254	-15.720	0.000	-16.54189	-12.86794
count71	-16.43071	1.30331	-12.607	0.000	-18.99013	-13.87129
count72	-14.42258	1.039093	-13.880	0.000	-16.46313	-12.38202
count73	-14.9745	1.122764	-13.337	0.000	-17.17937	-12.76963
count74	-14.84013	.9757083	-15.210	0.000	-16.75621	-12.92404
count75	-12.47617	.7095401	-17.583	0.000	-13.86955	-11.08278
count76	-14.8584	.8649263	-17.179	0.000	-16.55693	-13.15988
count77	-15.07973	1.073987	-14.041	0.000	-17.18881	-12.97065
count78	-11.55568	.649293	-17.797	0.000	-12.83075	-10.28061
count79	-13.95933	.905205	-15.421	0.000	-15.73696	-12.1817
count80	-13.87081	1.063073	-13.048	0.000	-15.95845	-11.78316
count81	-11.09482	.6661505	-16.655	0.000	-12.403	-9.786642
count82	-18.32659	1.257646	-14.572	0.000	-20.79634	-15.85684
count83	(dropped)					
count84	-16.6905	1.537103	-10.858	0.000	-19.70904	-13.67196
count85	-14.1036	.9477099	-14.882	0.000	-15.9647	-12.2425
count86	-17.47197	1.49654	-11.675	0.000	-20.41085	-14.53308
count87	-16.63029	1.316726	-12.630	0.000	-19.21605	-14.04452
count88	-14.89582	1.17564	-12.670	0.000	-17.20453	-12.58712
count89	-14.32802	1.046682	-13.689	0.000	-16.38348	-12.27256
count90	-13.33395	.9103742	-14.647	0.000	-15.12173	-11.54617
count91	-15.74075	1.332124	-11.816	0.000	-18.35676	-13.12475
count92	-13.49875	.8438707	-15.996	0.000	-15.15593	-11.84157
count93	-14.93757	1.16785	-12.791	0.000	-17.23098	-12.64417
count94	-12.2532	.8622517	-14.211	0.000	-13.94648	-10.55992
count95	-14.80261	1.060795	-13.954	0.000	-16.88579	-12.71944
count96	-16.05213	1.134397	-14.150	0.000	-18.27984	-13.82441
count97	-17.6126	1.046424	-16.831	0.000	-19.66755	-15.55765
count98	-12.31804	.7619695	-16.166	0.000	-13.81438	-10.82169
count99	-16.1902	1.239851	-13.058	0.000	-18.625	-13.7554
count100	-15.92892	1.185143	-13.441	0.000	-18.25629	-13.60156
count101	-10.74991	.6891392	-15.599	0.000	-12.10323	-9.396591

count102	-13.42356	1.016367	-13.207	0.000	-15.41949	-11.42763
count103	-12.64706	.8558486	-14.777	0.000	-14.32777	-10.96636
count104	-15.8259	1.057146	-14.970	0.000	-17.90191	-13.74989
count105	-14.38981	.9959814	-14.448	0.000	-16.3457	-12.43392
count106	-14.31595	1.075184	-13.315	0.000	-16.42738	-12.20452
count107	-16.17121	1.178698	-13.720	0.000	-18.48592	-13.8565
count108	-12.00797	.8447394	-14.215	0.000	-13.66686	-10.34909
count109	-15.22852	.9840371	-15.476	0.000	-17.16096	-13.29608
count110	-13.96239	1.029955	-13.556	0.000	-15.985	-11.93978
count111	-13.53187	1.063057	-12.729	0.000	-15.61948	-11.44425
count112	-13.46835	1.030987	-13.064	0.000	-15.49299	-11.44372
count113	-12.7048	.7200192	-17.645	0.000	-14.11876	-11.29083
count114	-12.89015	1.081147	-11.923	0.000	-15.01329	-10.76701
count115	-13.42426	.9862068	-13.612	0.000	-15.36096	-11.48757
count116	-13.79245	.9735633	-14.167	0.000	-15.70432	-11.88058
count117	-15.1101	1.256844	-12.022	0.000	-17.57827	-12.64193
count118	-13.51896	1.105536	-12.228	0.000	-15.68999	-11.34792
count119	-14.84372	1.276588	-11.628	0.000	-17.35066	-12.33677
count120	-14.33782	1.037302	-13.822	0.000	-16.37485	-12.30078
count121	-13.71109	1.044516	-13.127	0.000	-15.7623	-11.65989
count122	-11.52807	.6064983	-19.008	0.000	-12.7191	-10.33704
count123	-13.12347	.9199995	-14.265	0.000	-14.93016	-11.31679
count124	-15.6023	1.259498	-12.388	0.000	-18.07568	-13.12891
count125	-10.67778	.6775076	-15.760	0.000	-12.00826	-9.347297
count126	-12.23504	.6427294	-19.036	0.000	-13.49722	-10.97286
count127	-14.07346	1.096159	-12.839	0.000	-16.22608	-11.92084
count128	-13.79664	.9542339	-14.458	0.000	-15.67055	-11.92273
count129	-13.96721	1.18009	-11.836	0.000	-16.28465	-11.64976
count130	-14.71356	1.038827	-14.164	0.000	-16.7536	-12.67353
count131	-13.05134	1.103748	-11.825	0.000	-15.21886	-10.88381
count132	-15.30887	1.200158	-12.756	0.000	-17.66572	-12.95202
count133	-13.9562	1.046331	-13.338	0.000	-16.01097	-11.90144
count134	-14.4352	1.013928	-14.237	0.000	-16.42634	-12.44407
count135	-15.51932	1.185323	-13.093	0.000	-17.84704	-13.1916
count136	-14.63471	1.272242	-11.503	0.000	-17.13312	-12.1363
count137	-15.4976	1.420158	-10.913	0.000	-18.28649	-12.70872
count138	-14.66406	1.126889	-13.013	0.000	-16.87703	-12.4511
count139	-13.91896	1.092658	-12.739	0.000	-16.06471	-11.77322
count140	-13.25146	.6979994	-18.985	0.000	-14.62218	-11.88074
count141	-13.59015	.9175563	-14.811	0.000	-15.39204	-11.78827
count142	-14.72403	.8714542	-16.896	0.000	-16.43538	-13.01268
count143	-12.81595	.6199048	-20.674	0.000	-14.03331	-11.59859
count144	(dropped)					
count145	-12.41905	.5718915	-21.716	0.000	-13.54213	-11.29598

175. predict pla5emis;
(288 missing values generated)

176. predict se_emis, stdf;
(288 missing values generated)

177. generate u = pla5emis-la5emis;
(305 missing values generated)

178. list coun year pla5emis la5emis u se_emis if counindx==88;

	coun	year	pla5emis	la5emis	u	se_emis
665.	CHINA	1992	6.604819	6.518021	.0867977	.2945373
666.	CHINA	1962	.	5.11556	.	.
667.	CHINA	1957	.	3.968974	.	.
668.	CHINA	1987	6.270729	6.274206	-.0034776	.2939827
669.	CHINA	1977	5.763254	5.733543	.0297103	.293731
670.	CHINA	1967	4.829639	4.844869	-.0152292	.2944247
671.	CHINA	1972	5.358066	5.294098	.0639677	.2938422
672.	CHINA	1982	5.948099	6.02307	-.0749712	.2939842

179. list coun year pla5emis la5emis u se_emis if counindx==90;

	coun	year	pla5emis	la5emis	u	se_emis
681.	INDIA	1992	5.033352	5.236049	-.2026968	.2875769
682.	INDIA	1982	4.516047	4.575284	-.0592365	.2870614
683.	INDIA	1977	4.234917	4.255882	-.0209651	.286768
684.	INDIA	1987	4.73937	4.901045	-.161675	.2872927
685.	INDIA	1972	3.959838	3.99889	-.039052	.2867701
686.	INDIA	1957	3.336003	3.157894	.1781089	.287402
687.	INDIA	1967	3.850501	3.802467	.0480337	.2867501
688.	INDIA	1962	3.56562	3.510835	.0547857	.2870766

180. list coun year pla5emis la5emis u se_emis if counindx==64;

	coun	year	pla5emis	la5emis	u	se_emis
481.	MEXICO	1992	4.521382	4.441646	.0797358	.2877591
482.	MEXICO	1957	2.350728	2.41135	-.0606217	.2877161
483.	MEXICO	1977	3.849259	3.748322	.1009364	.2868175
484.	MEXICO	1987	4.400739	4.338542	.0621963	.2880754

```
 >
485.            MEXICO      1967   3.052479   3.050069    .0024097    .2867299
 >
486.            MEXICO      1982   4.159761   4.248595   -.0888343    .2870426
 >
487.            MEXICO      1962-  2.690516   2.810968   -.1204512    .2871356
 >
488.            MEXICO      1972   3.479191   3.374826    .1043651    .2866323
 >
```

```
181. gen err = (pla5emis - la5emis);
(305 missing values generated)

182. gen p5emis = exp(pla5emis);
(288 missing values generated)

183. gen a5emis = exp(la5emis);
(62 missing values generated)

184. gen err2 = (p5emis - a5emis)/a5emis;
(305 missing values generated)

185. gen sqerr = (pla5emis - la5emis)*(pla5emis - la5emis);
(305 missing values generated)

186. gen sumsqerr = sum(sqerr);

187. list sumsqerr if time==43;

     sumsqerr
  1.  .0278592
 10.  .2268274
 18.   1.09956
 27.  1.271599
 33.  1.394553
 43.  1.861521
 50.  2.179241
 57.  3.674781
 66.  4.031806
 75.  4.506284
 83.  4.924731
 91.  5.094386
 98.  5.757044
105.  5.769032
113.  5.899064
123.   6.69351
131.  7.764256
137.  7.907327
147.  8.012939
153.  8.117802
161.  8.175197
169.  8.778386
180.  9.301862
187.  9.485755
```

194. 9.798563
203. 9.894072
210. 12.29862
217. 13.01105
225. 13.37202
233. 14.52979
241. 15.22436
249. 16.84259
257. 18.88071
266. 19.47573
273. 19.91117
281. 20.29139
291. 22.40787
299. 22.78704
305. 23.174
314. 23.40573
322. 23.74641
334. 24.34449
337. 24.34622
347. 24.56314
353. 24.73677
361. 26.67642
370. 27.77239
378. 27.92619
389. 27.99149
395. 27.99149
401. 28.23156
409. 28.51882
417. 28.79686
432. 28.90888
433. 28.9118
441. 29.20704
449. 29.37106
458. 29.55247
465. 29.81482
474. 29.95953
481. 30.56356
489. 30.61459
497. 31.26688
506. 31.52854
517. 31.61447
521. 31.61447
529. 31.61447
537. 32.05321
545. 32.22398
553. 32.29865
561. 32.68354
569. 32.87463
577. 33.19605
585. 33.47952
593. 33.98163
601. 34.18215
609. 34.64668
618. 34.91604

625.	35.09497
633.	35.71517
646.	37.43371
651.	38.0458
660.	40.14307
665.	40.1506
674.	40.21608
681.	40.28748
689.	40.37473
697.	40.43299
705.	40.6777
713.	41.36167
721.	41.73662
730.	41.86109
737.	42.23569
750.	42.36178
757.	42.36208
761.	42.38814
770.	42.62575
780.	42.74661
785.	42.87448
793.	43.05838
801.	43.33226
811.	43.33226
817.	43.88102
825.	45.23083
834.	45.68581
841.	45.79189
849.	45.96038
858.	46.77076
866.	46.77076
873.	46.95609
881.	47.39138
889.	47.8307
897.	47.95459
905.	48.56152
913.	48.66781
921.	48.70673
929.	49.67107
937.	50.0753
945.	50.07644
953.	50.34098
964.	51.05951
969.	51.38621
977.	52.14845
985.	52.21176
993.	53.12721
1002.	53.67414
1009.	53.90667
1017.	54.18544
1028.	54.34011
1033.	54.41285
1042.	54.65786
1049.	54.70295

```
1057.  55.06737
1065.  55.30544
1073.  55.39444
1081.  55.69985
1089.  56.06545
1097.  56.11429
1105.  56.17398
1113.  56.28242
1121.  56.43919
1130.  56.62209
1138.  57.49413
1147.  57.49413
1156.  57.49413
```

```
188. graph err2 if time==43, histogram bin(8) normal freq xlab(-2.0,-1.0,0,1.0,2.0
  > );
```

```
.
end of do-file

.
```

Stata Corporation
702 University Drive East
College Station, Texas 77840
409-696-4600, fax 409-696-4601

Statistics/Data Analysis

```
1. set more 1;

2. gen annex1 = counindx == 54| counindx == 67| counindx == 72| counindx == 95|
 > counindx == 116| counindx == 117| counindx == 118| counindx == 120| counindx
 > == 121|
 > counindx == 122| counindx == 123| counindx == 124| counindx == 125| counindx
 > == 126|
 > counindx == 127| counindx == 128| counindx == 129| counindx == 130| counindx
 > == 131|
 > counindx == 133| counindx == 134| counindx == 135| counindx == 136| counindx
 > == 137|
 > counindx == 138| counindx == 139| counindx == 140| counindx == 142| counindx
 > == 143|
 > counindx == 144| counindx == 145| counindx == 147;

3. generate lgdp15 = ln(gdp_ppp[_n-5]);
(1501 missing values generated)

4. generate lgdp16 = ln(gdp_ppp[_n-6]);
(1502 missing values generated)

5. generate lpop15 = ln(pop[_n-5]);
(1466 missing values generated)

6. generate dev = popgdp[_n+20] if time==1;
(6403 missing values generated)

7. replace dev = popgdp[_n+19] if time==2;
(133 real changes made)

8. replace dev = popgdp[_n+18] if time==3;
(133 real changes made)

9. replace dev = popgdp[_n+17] if time==4;
(133 real changes made)

10. replace dev = popgdp[_n+16] if time==5;
(133 real changes made)

11. replace dev = popgdp[_n+15] if time==6;
(133 real changes made)

12. replace dev = popgdp[_n+14] if time==7;
(133 real changes made)

13. replace dev = popgdp[_n+13] if time==8;
(133 real changes made)

14. replace dev = popgdp[_n+12] if time==9;
(133 real changes made)

15. replace dev = popgdp[_n+11] if time==10;
```

(133 real changes made)

16. **replace dev = popgdp[_n+10] if time==11;**
(133 real changes made)

17. **replace dev = popgdp[_n+9] if time==12;**
(133 real changes made)

18. **replace dev = popgdp[_n+8] if time==13;**
(133 real changes made)

19. **replace dev = popgdp[_n+7] if time==14;**
(133 real changes made)

20. **replace dev = popgdp[_n+6] if time==15;**
(133 real changes made)

21. **replace dev = popgdp[_n+5] if time==16;**
(133 real changes made)

22. **replace dev = popgdp[_n+4] if time==17;**
(133 real changes made)

23. **replace dev = popgdp[_n+3] if time==18;**
(133 real changes made)

24. **replace dev = popgdp[_n+2] if time==19;**
(133 real changes made)

25. **replace dev = popgdp[_n+1] if time==20;**
(133 real changes made)

26. **replace dev = popgdp if time==21;**
(133 real changes made)

27. **replace dev = popgdp[_n-1] if time==22;**
(133 real changes made)

28. **replace dev = popgdp[_n-2] if time==23;**
(133 real changes made)

29. **replace dev = popgdp[_n-3] if time==24;**
(133 real changes made)

30. **replace dev = popgdp[_n-4] if time==25;**
(133 real changes made)

31. **replace dev = popgdp[_n-5] if time==26;**
(133 real changes made)

32. **replace dev = popgdp[_n-6] if time==27;**
(133 real changes made)

33. **replace dev = popgdp[_n-7] if time==28;**

(133 real changes made)

34. **replace dev = popgdp[_n-8] if time==29;**
(133 real changes made)

35. **replace dev = popgdp[_n-9] if time==30;**
(133 real changes made)

36. **replace dev = popgdp[_n-10] if time==31;**
(133 real changes made)

37. **replace dev = popgdp[_n-11] if time==32;**
(133 real changes made)

38. **replace dev = popgdp[_n-12] if time==33;**
(133 real changes made)

39. **replace dev = popgdp[_n-13] if time==34;**
(133 real changes made)

40. **replace dev = popgdp[_n-14] if time==35;**
(133 real changes made)

41. **replace dev = popgdp[_n-15] if time==36;**
(133 real changes made)

42. **replace dev = popgdp[_n-16] if time==37;**
(133 real changes made)

43. **replace dev = popgdp[_n-17] if time==38;**
(133 real changes made)

44. **replace dev = popgdp[_n-18] if time==39;**
(133 real changes made)

45. **replace dev = popgdp[_n-19] if time==40;**
(133 real changes made)

46. **replace dev = popgdp[_n-20] if time==41;**
(133 real changes made)

47. **replace dev = popgdp[_n-21] if time==42;**
(133 real changes made)

48. **replace dev = popgdp[_n-22] if time==43;**
(133 real changes made)

49. **generate dev2 = popgdp[_n+30] if time==1;**
(6394 missing values generated)

50. **replace dev2 = popgdp[_n+29] if time==2;**
(142 real changes made)

51. **replace dev2 = popgdp[_n+28] if time==3;**

(142 real changes made)

52. **replace dev2 = popgdp[_n+27] if time==4;**
(142 real changes made)

53. **replace dev2 = popgdp[_n+26] if time==5;**
(142 real changes made)

54. **replace dev2 = popgdp[_n+25] if time==6;**
(142 real changes made)

55. **replace dev2 = popgdp[_n+24] if time==7;**
(142 real changes made)

56. **replace dev2 = popgdp[_n+23] if time==8;**
(142 real changes made)

57. **replace dev2 = popgdp[_n+22] if time==9;**
(142 real changes made)

58. **replace dev2 = popgdp[_n+21] if time==10;**
(142 real changes made)

59. **replace dev2 = popgdp[_n+20] if time==11;**
(142 real changes made)

60. **replace dev2 = popgdp[_n+19] if time==12;**
(142 real changes made)

61. **replace dev2 = popgdp[_n+18] if time==13;**
(142 real changes made)

62. **replace dev2 = popgdp[_n+17] if time==14;**
(142 real changes made)

63. **replace dev2 = popgdp[_n+16] if time==15;**
(142 real changes made)

64. **replace dev2 = popgdp[_n+15] if time==16;**
(142 real changes made)

65. **replace dev2 = popgdp[_n+14] if time==17;**
(142 real changes made)

66. **replace dev2 = popgdp[_n+13] if time==18;**
(142 real changes made)

67. **replace dev2 = popgdp[_n+12] if time==19;**
(142 real changes made)

68. **replace dev2 = popgdp[_n+11] if time==20;**
(142 real changes made)

69. **replace dev2 = popgdp[_n+10] if time==21;**

(142 real changes made)

70. **replace dev2 = popgdp[_n+9] if time==22;**
(142 real changes made)

71. **replace dev2 = popgdp[_n+8] if time==23;**
(142 real changes made)

72. **replace dev2 = popgdp[_n+7] if time==24;**
(142 real changes made)

73. **replace dev2 = popgdp[_n+6] if time==25;**
(142 real changes made)

74. **replace dev2 = popgdp[_n+5] if time==26;**
(142 real changes made)

75. **replace dev2 = popgdp[_n+4] if time==27;**
(142 real changes made)

76. **replace dev2 = popgdp[_n+3] if time==28;**
(142 real changes made)

77. **replace dev2 = popgdp[_n+2] if time==29;**
(142 real changes made)

78. **replace dev2 = popgdp[_n+1] if time==30;**
(142 real changes made)

79. **replace dev2 = popgdp if time==31;**
(142 real changes made)

80. **replace dev2 = popgdp[_n-1] if time==32;**
(142 real changes made)

81. **replace dev2 = popgdp[_n-2] if time==33;**
(142 real changes made)

82. **replace dev2 = popgdp[_n-3] if time==34;**
(142 real changes made)

83. **replace dev2 = popgdp[_n-4] if time==35;**
(142 real changes made)

84. **replace dev2 = popgdp[_n-5] if time==36;**
(142 real changes made)

85. **replace dev2 = popgdp[_n-6] if time==37;**
(142 real changes made)

86. **replace dev2 = popgdp[_n-7] if time==38;**
(142 real changes made)

87. **replace dev2 = popgdp[_n-8] if time==39;**

(142 real changes made)

88. **replace dev2 = popgdp[_n-9] if time==40;**
(142 real changes made)

89. **replace dev2 = popgdp[_n-10] if time==41;**
(142 real changes made)

90. **replace dev2 = popgdp[_n-11] if time==42;**
(142 real changes made)

91. **replace dev2 = popgdp[_n-12] if time==43;**
(142 real changes made)

92. **gen devdum = dev >= 4000;**

93. **gen devduma = dev2 >=1610;**

94. **gen devdumb = dev2 >=4500;**

95. **gen afrdum = counindx<=50;**

96. **gen afrdum2 = afrdum*lgdp15;**
(1501 missing values generated)

97. **gen namdum = counindx<=72;**

98. **replace namdum = 0 if counindx<=50;**
(2149 real changes made)

99. **gen namdum2 = namdum*lgdp15;**
(1501 missing values generated)

100. **gen samdum = counindx<=84;**

101. **replace samdum = 0 if counindx<=72;**
(3095 real changes made)

102. **gen samdum2 = samdum*lgdp15;**
(1501 missing values generated)

103. **gen asiadum = counindx<=115;**

104. **replace asiadum = 0 if counindx<=84;**
(3611 real changes made)

105. **gen asiadum2 = asiadum*lgdp15;**
(1501 missing values generated)

106. **gen eurodum = counindx<=144;**

107. **replace eurodum = 0 if counindx<=115;**
(4944 real changes made)

```
108. gen eurodum2 = eurodum*lgdpl5;
(1501 missing values generated)

109. gen ausdum = counindx<=152;

110. replace ausdum = 0 if counindx<=144;
(6191 real changes made)

111. gen ausdum2 = ausdum*lgdpl5;
(1501 missing values generated)

112. gen inv = (invest/100);
(1496 missing values generated)

113. generate la5emis = ln((totalcd + totalcd[_n-1] + totalcd[_n-2] + totalcd[_n-3
  > ] +
  > totalcd[_n-4])/5000);
(544 missing values generated)

114. gen devdum2 = (devdum*lgdpl5);
(1501 missing values generated)

115. gen devdum3a = (devduma*lgdpl5);
(1501 missing values generated)

116. gen devdum3b = (devdumb*lgdpl5);
(1501 missing values generated)

117. generate timesq = time*time;

118. gen trend = time;

119. gen trend2 = (trend*lgdpl5);
(1501 missing values generated)

120. drop if counindx==23;
(43 observations deleted)

121. drop if counindx==32;
(43 observations deleted)

122. drop if counindx==59;
(43 observations deleted)

123. drop if counindx==68;
(43 observations deleted)

124. drop if counindx==99;
(43 observations deleted)

125. drop if counindx==101;
(43 observations deleted)

126. drop if counindx==151;
```

(143 observations deleted)

127. **drop if time==42;**
(145 observations deleted)

128. **drop if time==41;**
(145 observations deleted)

129. **drop if time==40;**
(145 observations deleted)

130. **drop if time==39;**
(145 observations deleted)

131. **drop if time==37;**
(145 observations deleted)

132. **drop if time==36;**
(145 observations deleted)

133. **drop if time==35;**
(145 observations deleted)

134. **drop if time==34;**
(145 observations deleted)

135. **drop if time==32;**
(145 observations deleted)

136. **drop if time==31;**
(145 observations deleted)

137. **drop if time==30;**
(145 observations deleted)

138. **drop if time==29;**
(145 observations deleted)

139. **drop if time==27;**
(145 observations deleted)

140. **drop if time==26;**
(145 observations deleted)

141. **drop if time==25;**
(145 observations deleted)

142. **drop if time==24;**
(145 observations deleted)

143. **drop if time==22;**
(145 observations deleted)

144. **drop if time==21;**

(145 observations deleted)

145. **drop if time==20;**
(145 observations deleted)

146. **drop if time==19;**
(145 observations deleted)

147. **drop if time==17;**
(145 observations deleted)

148. **drop if time==16;**
(145 observations deleted)

149. **drop if time==15;**
(145 observations deleted)

150. **drop if time==14;**
(145 observations deleted)

151. **drop if time==12;**
(145 observations deleted)

152. **drop if time==11;**
(145 observations deleted)

153. **drop if time==10;**
(145 observations deleted)

154. **drop if time==9;**
(145 observations deleted)

155. **drop if time==7;**
(145 observations deleted)

156. **drop if time==6;**
(145 observations deleted)

157. **drop if time==5;**
(145 observations deleted)

158. **drop if time==4;**
(145 observations deleted)

159. **drop if time==3;**
(145 observations deleted)

160. **drop if time==2;**
(145 observations deleted)

161. **drop if time==1;**
(144 observations deleted)

162. **set matsize 300;**

```
. generate time2=1 if time==8;
(1015 missing values generated)

. replace time2=2 if time==13;
(145 real changes made)

. replace time2=3 if time==18;
(145 real changes made)

. replace time2=4 if time==23;
(145 real changes made)

. replace time2=5 if time==28;
(145 real changes made)

. replace time2=6 if time==33;
(145 real changes made)

. replace time2=7 if time==38;
(145 real changes made)

. replace time2=8 if time==43;
(145 real changes made)

. generate time2sq = time2*time2;

. tab counindx, generate(count);
```

counindx	Freq.	Percent	Cum.
1	8	0.69	0.69
2	8	0.69	1.38
3	8	0.69	2.07
4	8	0.69	2.76
5	8	0.69	3.45
6	8	0.69	4.14
7	8	0.69	4.83
8	8	0.69	5.52
9	8	0.69	6.21
10	8	0.69	6.90
11	8	0.69	7.59
12	8	0.69	8.28
13	8	0.69	8.97
14	8	0.69	9.66
15	8	0.69	10.34
16	8	0.69	11.03
17	8	0.69	11.72
18	8	0.69	12.41
19	8	0.69	13.10
20	8	0.69	13.79
21	8	0.69	14.48
22	8	0.69	15.17
24	8	0.69	15.86

25	8	0.69	16.55
26	8	0.69	17.24
27	8	0.69	17.93
28	8	0.69	18.62
29	8	0.69	19.31
30	8	0.69	20.00
31	8	0.69	20.69
33	8	0.69	21.38
34	8	0.69	22.07
35	8	0.69	22.76
36	8	0.69	23.45
37	8	0.69	24.14
38	8	0.69	24.83
39	8	0.69	25.52
40	8	0.69	26.21
41	8	0.69	26.90
42	8	0.69	27.59
43	8	0.69	28.28
44	8	0.69	28.97
45	8	0.69	29.66
46	8	0.69	30.34
47	8	0.69	31.03
48	8	0.69	31.72
49	8	0.69	32.41
50	8	0.69	33.10
51	8	0.69	33.79
52	8	0.69	34.48
53	8	0.69	35.17
54	8	0.69	35.86
55	8	0.69	36.55
56	8	0.69	37.24
57	8	0.69	37.93
58	8	0.69	38.62
60	8	0.69	39.31
61	8	0.69	40.00
62	8	0.69	40.69
63	8	0.69	41.38
64	8	0.69	42.07
65	8	0.69	42.76
66	8	0.69	43.45
67	8	0.69	44.14
69	8	0.69	44.83
70	8	0.69	45.52
71	8	0.69	46.21
72	8	0.69	46.90
73	8	0.69	47.59
74	8	0.69	48.28
75	8	0.69	48.97
76	8	0.69	49.66
77	8	0.69	50.34
78	8	0.69	51.03
79	8	0.69	51.72
80	8	0.69	52.41
81	8	0.69	53.10

82	8	0.69	53.79
83	8	0.69	54.48
84	8	0.69	55.17
85	8	0.69	55.86
86	8	0.69	56.55
87	8	0.69	57.24
88	8	0.69	57.93
89	8	0.69	58.62
90	8	0.69	59.31
91	8	0.69	60.00
92	8	0.69	60.69
93	8	0.69	61.38
94	8	0.69	62.07
95	8	0.69	62.76
96	8	0.69	63.45
97	8	0.69	64.14
98	8	0.69	64.83
100	8	0.69	65.52
102	8	0.69	66.21
103	8	0.69	66.90
104	8	0.69	67.59
105	8	0.69	68.28
106	8	0.69	68.97
107	8	0.69	69.66
108	8	0.69	70.34
109	8	0.69	71.03
110	8	0.69	71.72
111	8	0.69	72.41
112	8	0.69	73.10
113	8	0.69	73.79
114	8	0.69	74.48
115	8	0.69	75.17
116	8	0.69	75.86
117	8	0.69	76.55
118	8	0.69	77.24
119	8	0.69	77.93
120	8	0.69	78.62
121	8	0.69	79.31
122	8	0.69	80.00
123	8	0.69	80.69
124	8	0.69	81.38
125	8	0.69	82.07
126	8	0.69	82.76
127	8	0.69	83.45
128	8	0.69	84.14
129	8	0.69	84.83
130	8	0.69	85.52
131	8	0.69	86.21
132	8	0.69	86.90
133	8	0.69	87.59
134	8	0.69	88.28
135	8	0.69	88.97
136	8	0.69	89.66
137	8	0.69	90.34

```
       138 |          8        0.69       91.03
       139 |          8        0.69       91.72
       140 |          8        0.69       92.41
       141 |          8        0.69       93.10
       142 |          8        0.69       93.79
       143 |          8        0.69       94.48
       144 |          8        0.69       95.17
       145 |          8        0.69       95.86
       146 |          8        0.69       96.55
       147 |          8        0.69       97.24
       148 |          8        0.69       97.93
       149 |          8        0.69       98.62
       150 |          8        0.69       99.31
       152 |          8        0.69      100.00
-----------+-----------------------------------
     Total |       1160      100.00
```

```
173. xtreg la5emis lgdp15 lgdp16 lpop15 afrdum2 namdum2 samdum2 asiadum2 eurodum2
  > time2 if time<=42, fe i(counindx);
```

Fixed-effects (within) regression

```
sd(u_counindx)                =  1.931232      Number of obs =       770
sd(e_counindx_t)              =  .2803293            n =       140
sd(e_counindx_t + u_counindx)=  1.951471         T-bar =       5.5

corr(u_counindx, Xb)          =   -0.4460      R-sq within   =    0.7894
                                               between   =    0.5378
                                               overall   =    0.5456

                                               F(  9,    621) =  258.65
                                                    Prob > F =  0.0000
```

```
------------------------------------------------------------------------------
 la5emis |      Coef.   Std. Err.       t     P>|t|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
  lgdp15 |   1.004468   .2550242     3.939   0.000        .5036536    1.505282
  lgdp16 |  -.3289415    .200499    -1.641   0.101       -.7226797    .0647967
  lpop15 |   .7385029   .1683469     4.387   0.000        .4079047    1.069101
 afrdum2 |   .2825093   .1667074     1.695   0.091       -.0448692    .6098879
 namdum2 |   .1012623    .169283     0.598   0.550       -.2311742    .4336987
 samdum2 |   .0579212    .173351     0.334   0.738        -.282504    .3983465
asiadum2 |   .1907206   .1657546     1.151   0.250       -.1347869     .516228
eurodum2 |   .0557946   .1693897     0.329   0.742       -.2768514    .3884405
   time2 |  -.0013031    .021425    -0.061   0.952       -.0433773    .0407711
   _cons |  -13.63633   1.413254    -9.649   0.000       -16.41167   -10.86099
------------------------------------------------------------------------------
counindx |          F(139,621) =     35.572   0.000          (140 categories)
```

```
174. regress la5emis lgdp15 lgdp16 lpop15 afrdum2 namdum2 samdum2 asiadum2 eurodum
  > 2
  > time2 count* if time<=42, noconstant;

  Source |       SS       df       MS                  Number of obs =       770
---------+------------------------------               F(149,    621) =    443.52
```

Model	5193.2322	149	34.8539074	Prob > F	= 0.0000
Residual	48.8009768	621	.078584504	R-squared	= 0.9907
				Adj R-squared	= 0.9885
Total	5242.03317	770	6.80783529	Root MSE	= .28033

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	1.004468	.2550242	3.939	0.000	.5036535	1.505282
lgdpl6	-.3289413	.200499	-1.641	0.101	-.7226795	.0647969
lpopl5	.738503	.1683469	4.387	0.000	.4079048	1.069101
afrdum2	.2825093	.1667074	1.695	0.091	-.0448692	.6098879
namdum2	.1012623	.169283	0.598	0.550	-.2311741	.4336987
samdum2	.0579212	.173351	0.334	0.738	-.282504	.3983464
asiadum2	.1907205	.1657546	1.151	0.250	-.134787	.516228
eurodum2	.0557945	.1693897	0.329	0.742	-.2768515	.3884405
time2	-.0013032	.021425	-0.061	0.952	-.0433774	.040771
count1	-14.92885	1.453156	-10.273	0.000	-17.78254	-12.07515
count2	-14.81951	1.306515	-11.343	0.000	-17.38523	-12.25379
count3	-16.00485	1.181439	-13.547	0.000	-18.32495	-13.68475
count4	-13.29709	.9762715	-13.620	0.000	-15.21429	-11.3799
count5	-16.73448	1.288294	-12.990	0.000	-19.26442	-14.20454
count6	-17.00594	1.210616	-14.047	0.000	-19.38334	-14.62854
count7	-15.88775	1.323409	-12.005	0.000	-18.48665	-13.28885
count8	-13.13907	.8009873	-16.404	0.000	-14.71204	-11.56609
count9	-15.84523	1.120739	-14.138	0.000	-18.04613	-13.64434
count10	-16.65898	1.224301	-13.607	0.000	-19.06325	-14.25471
count11	-13.99674	.8108328	-17.262	0.000	-15.58905	-12.40444
count12	-14.32416	1.06464	-13.454	0.000	-16.41489	-12.23343
count13	-12.56515	.7995133	-15.716	0.000	-14.13523	-10.99508
count14	-15.59351	1.575605	-9.897	0.000	-18.68767	-12.49936
count15	-17.51643	1.542077	-11.359	0.000	-20.54474	-14.48811
count16	-12.48738	.9581831	-13.032	0.000	-14.36905	-10.60571
count17	-14.12306	.9062429	-15.584	0.000	-15.90273	-12.34339
count18	-15.7522	1.362144	-11.564	0.000	-18.42717	-13.07723
count19	-15.18477	1.23963	-12.249	0.000	-17.61914	-12.7504
count20	-14.18615	.9371581	-15.137	0.000	-16.02653	-12.34577
count21	-15.42899	1.307047	-11.804	0.000	-17.99576	-12.86222
count22	-15.52939	1.40414	-11.060	0.000	-18.28683	-12.77195
count23	-13.55485	1.077909	-12.575	0.000	-15.67164	-11.43807
count24	-16.44664	1.328387	-12.381	0.000	-19.05531	-13.83796
count25	-15.73894	1.263006	-12.461	0.000	-18.21922	-13.25866
count26	-16.44398	1.279889	-12.848	0.000	-18.95742	-13.93055
count27	-14.09646	1.055361	-13.357	0.000	-16.16897	-12.02395
count28	-14.55596	1.006801	-14.458	0.000	-16.53311	-12.57882
count29	-15.71544	1.455781	-10.795	0.000	-18.57429	-12.85659
count30	-16.27457	1.383487	-11.763	0.000	-18.99145	-13.55769
count31	-16.28123	1.248087	-13.045	0.000	-18.73221	-13.83025
count32	-16.64229	1.66124	-10.018	0.000	-19.90462	-13.37996
count33	-13.23774	.9007922	-14.696	0.000	-15.00671	-11.46877
count34	-17.02249	1.230589	-13.833	0.000	-19.43911	-14.60587
count35	-15.20344	1.259205	-12.074	0.000	-17.67626	-12.73063
count36	-11.80571	.5698467	-20.717	0.000	-12.92477	-10.68665
count37	-15.51593	1.181187	-13.136	0.000	-17.83554	-13.19633

count38	-16.45736	1.24368	-13.233	0.000	-18.89968	-14.01503
count39	-14.12473	1.531408	-9.223	0.000	-17.1321	-11.11736
count40	-16.41426	1.455054	-11.281	0.000	-19.27168	-13.55684
count41	-13.56334	.9077099	-14.942	0.000	-15.34589	-11.78078
count42	-15.81092	1.438402	-10.992	0.000	-18.63564	-12.9862
count43	-14.78007	1.129526	-13.085	0.000	-16.99822	-12.56191
count44	-14.63234	1.290252	-11.341	0.000	-17.16612	-12.09855
count45	-16.78294	1.369389	-12.256	0.000	-19.47213	-14.09375
count46	-16.29949	1.493323	-10.915	0.000	-19.23207	-13.36692
count47	-14.44083	1.258543	-11.474	0.000	-16.91235	-11.96931
count48	-13.94449	1.294464	-10.772	0.000	-16.48655	-11.40244
count49	-10.78753	.8967934	-12.029	0.000	-12.54864	-9.02641
count50	-11.50102	.8808446	-13.057	0.000	-13.23082	-9.771228
count51	-11.54624	.8031895	-14.375	0.000	-13.12354	-9.968942
count52	-12.36814	1.645222	-7.518	0.000	-15.59901	-9.137267
count53	-13.00097	1.182467	-10.995	0.000	-15.32309	-10.67885
count54	(dropped)					
count55	-13.18699	1.329419	-9.919	0.000	-15.7977	-10.57629
count56	-13.72787	1.292523	-10.621	0.000	-16.26611	-11.18962
count57	-13.87252	1.363208	-10.176	0.000	-16.54957	-11.19546
count58	-14.69873	1.326382	-11.082	0.000	-17.30347	-12.09399
count59	-13.17139	1.238767	-10.633	0.000	-15.60407	-10.73871
count60	-11.8245	1.20315	-9.828	0.000	-14.18724	-9.461767
count61	-13.86767	1.758957	-7.884	0.000	-17.32189	-10.41344
count62	-13.19869	1.215926	-10.855	0.000	-15.58652	-10.81087
count63	-12.26062	1.161918	-10.552	0.000	-14.54238	-9.978851
count64	-11.94267	1.289001	-9.265	0.000	-14.474	-9.411343
count65	(dropped)					
count66	(dropped)					
count67	-11.0669	1.119301	-9.887	0.000	-13.26498	-8.868829
count68	-13.45251	2.032377	-6.619	0.000	-17.44367	-9.461343
count69	-12.96993	1.676453	-7.737	0.000	-16.26213	-9.677723
count70	-13.02618	1.344664	-9.687	0.000	-15.66682	-10.38554
count71	-14.21469	1.872307	-7.592	0.000	-17.89151	-10.53787
count72	-12.54717	1.499562	-8.367	0.000	-15.492	-9.602341
count73	-13.06392	1.613265	-8.098	0.000	-16.23204	-9.895808
count74	-13.01932	1.405593	-9.263	0.000	-15.77961	-10.25903
count75	-10.9931	1.025364	-10.721	0.000	-13.0067	-8.979496
count76	-13.3911	1.241616	-10.785	0.000	-15.82938	-10.95283
count77	-13.17534	1.546474	-8.520	0.000	-16.21229	-10.13839
count78	-10.23814	.943587	-10.850	0.000	-12.09114	-8.385127
count79	-12.38186	1.309138	-9.458	0.000	-14.95273	-9.810982
count80	-11.9401	1.541413	-7.746	0.000	-14.96711	-8.913083
count81	-10.59115	.8832666	-11.991	0.000	-12.3257	-8.856599
count82	-17.94785	1.732365	-10.360	0.000	-21.34985	-14.54584
count83	(dropped)					
count84	-15.90273	2.130087	-7.466	0.000	-20.08577	-11.71968
count85	-13.66014	1.288123	-10.605	0.000	-16.18974	-11.13053
count86	-16.8456	2.068601	-8.143	0.000	-20.9079	-12.7833
count87	-15.9643	1.822386	-8.760	0.000	-19.54309	-12.38551
count88	-14.46431	1.603795	-9.019	0.000	-17.61383	-11.31479
count89	-13.99054	1.423889	-9.826	0.000	-16.78676	-11.19432
count90	-12.79423	1.23761	-10.338	0.000	-15.22464	-10.36382
count91	-14.96317	1.821516	-8.215	0.000	-18.54024	-11.38609

count92	-13.08586	1.158396	-11.297	0.000	-15.36071	-10.81101
count93	-14.30211	1.609313	-8.887	0.000	-17.46246	-11.14175
count94	-11.99479	1.136958	-10.550	0.000	-14.22754	-9.762047
count95	-14.15981	1.453365	-9.743	0.000	-17.01392	-11.30571
count96	-15.53302	1.578582	-9.840	0.000	-18.63303	-12.43302
count97	-17.20323	1.445729	-11.899	0.000	-20.04234	-14.36412
count98	-11.8664	1.027817	-11.545	0.000	-13.88482	-9.847985
count99	-15.6751	1.713898	-9.146	0.000	-19.04084	-12.30936
count100	-15.39748	1.633053	-9.429	0.000	-18.60445	-12.1905
count101	-10.60743	.8840052	-11.999	0.000	-12.34343	-8.871424
count102	-13.2016	1.369477	-9.640	0.000	-15.89097	-10.51224
count103	-11.95176	1.170231	-10.213	0.000	-14.24985	-9.653672
count104	-15.44467	1.454462	-10.619	0.000	-18.30093	-12.58841
count105	-13.97558	1.361547	-10.264	0.000	-16.64937	-11.30179
count106	-13.75697	1.477536	-9.311	0.000	-16.65855	-10.8554
count107	-15.62364	1.625169	-9.614	0.000	-18.81513	-12.43214
count108	-11.71106	1.105343	-10.595	0.000	-13.88172	-9.540396
count109	-14.6827	1.358716	-10.806	0.000	-17.35093	-12.01446
count110	-11.97015	1.952713	-6.130	0.000	-15.80487	-8.135432
count111	-11.51478	2.015576	-5.713	0.000	-15.47295	-7.556608
count112	-11.2533	1.934684	-5.817	0.000	-15.05261	-7.453981
count113	-11.08642	1.370857	-8.087	0.000	-13.7785	-8.394345
count114	-10.76679	2.03061	-5.302	0.000	-14.75449	-6.779098
count115	-11.47536	1.87921	-6.106	0.000	-15.16573	-7.78498
count116	-11.70703	1.855003	-6.311	0.000	-15.34987	-8.064189
count117	-12.76196	2.371529	-5.381	0.000	-17.41915	-8.104769
count118	-11.27515	2.102362	-5.363	0.000	-15.40375	-7.146546
count119	-12.44769	2.408153	-5.169	0.000	-17.1768	-7.718578
count120	-12.39331	1.948096	-6.362	0.000	-16.21896	-8.567652
count121	-11.63799	1.97927	-5.880	0.000	-15.52486	-7.751116
count122	-10.05446	1.17847	-8.532	0.000	-12.36872	-7.740187
count123	-11.32442	1.742381	-6.499	0.000	-14.74609	-7.902745
count124	-13.22117	2.37138	-5.575	0.000	-17.87807	-8.564278
count125	-9.052346	1.316499	-6.876	0.000	-11.63767	-6.467017
count126	-10.82292	1.220765	-8.866	0.000	-13.22025	-8.425592
count127	-11.98567	2.077583	-5.769	0.000	-16.06561	-7.905729
count128	-11.77206	1.821202	-6.464	0.000	-15.34852	-8.195601
count129	-11.64651	2.225343	-5.234	0.000	-16.01662	-7.276402
count130	-12.75405	1.947227	-6.550	0.000	-16.57799	-8.930099
count131	-10.9007	2.040666	-5.342	0.000	-14.90814	-6.893259
count132	-13.08648	2.255039	-5.803	0.000	-17.5149	-8.658052
count133	-11.96612	1.990219	-6.012	0.000	-15.87449	-8.057744
count134	-12.37808	1.937557	-6.388	0.000	-16.18303	-8.573121
count135	-13.41752	2.204558	-6.086	0.000	-17.74681	-9.08823
count136	-12.43716	2.395197	-5.193	0.000	-17.14083	-7.733495
count137	-12.70247	2.665512	-4.765	0.000	-17.93698	-7.467956
count138	-12.43308	2.122044	-5.859	0.000	-16.60033	-8.265827
count139	-11.13515	2.438357	-4.567	0.000	-15.92357	-6.346726
count140	-11.46531	1.546659	-7.413	0.000	-14.50263	-8.427996
count141	-11.19499	2.082787	-5.375	0.000	-15.28515	-7.104832
count142	-12.67008	1.845887	-6.864	0.000	-16.29502	-9.045145
count143	-11.21691	1.28196	-8.750	0.000	-13.73441	-8.699405
count144	(dropped)					
count145	-10.91042	1.188109	-9.183	0.000	-13.24361	-8.577218

---

175. predict pla5emis;
(237 missing values generated)

176. predict se_emis, stdf;
(237 missing values generated)

177. generate u = pla5emis-la5emis;
(259 missing values generated)

178. list coun year pla5emis la5emis u se_emis if counindx==88;

	coun	year	pla5emis	la5emis	u	se_emis
665.	CHINA	1962	.	5.11556	.	.
666.	CHINA	1957	.	3.968974	.	.
667.	CHINA	1992	6.598672	6.518021	.0806508	.3100654
668.	CHINA	1967	4.889454	4.844869	.0445852	.3086584
669.	CHINA	1972	5.346773	5.294098	.0526748	.3074767
670.	CHINA	1977	5.738176	5.733543	.0046329	.3071994
671.	CHINA	1982	5.951891	6.02307	-.0711794	.3076408
672.	CHINA	1987	6.243492	6.274206	-.030714	.3081787

179. list coun year pla5emis la5emis u se_emis if counindx==90;

	coun	year	pla5emis	la5emis	u	se_emis
681.	INDIA	1992	5.070359	5.236049	-.1656904	.3030201
682.	INDIA	1957	3.363708	3.157894	.2058148	.3015893
683.	INDIA	1962	3.593193	3.510835	.0823584	.3006415
684.	INDIA	1987	4.74496	4.901045	-.156085	.3015819
685.	INDIA	1972	3.958932	3.99889	-.0399587	.299919
686.	INDIA	1977	4.214847	4.255882	-.0410352	.2999794
687.	INDIA	1982	4.497763	4.575284	-.0775208	.3006885
688.	INDIA	1967	3.828894	3.802467	.0264268	.2999787

180. list coun year pla5emis la5emis u se_emis if counindx==64;

	coun	year	pla5emis	la5emis	u	se_emis
481.	MEXICO	1992	4.476805	4.441646	.0351591	.3045366
482.	MEXICO	1962	2.76839	2.810968	-.0425773	.3018756
483.	MEXICO	1972	3.468761	3.374826	.093935	.2997918
484.	MEXICO	1987	4.396997	4.338542	.0584545	.3049487
485.	MEXICO	1977	3.805653	3.748322	.0573304	.3005647
486.	MEXICO	1957	2.399396	2.41135	-.0119536	.3047961
487.	MEXICO	1967	3.05425	3.050069	.0041809	.3005184
488.	MEXICO	1982	4.089225	4.248595	-.1593704	.3018376

```
181. gen err = (pla5emis - la5emis);
(259 missing values generated)

182. gen p5emis = exp(pla5emis);
(237 missing values generated)

183. gen a5emis = exp(la5emis);
(62 missing values generated)

184. gen err2 = (p5emis - a5emis)/a5emis;
(259 missing values generated)

185. gen sqerr = (pla5emis - la5emis)*(pla5emis - la5emis);
(259 missing values generated)

186. gen sumsqerr = sum(sqerr);

187. list sumsqerr if time==43;

      sumsqerr
   3.  .0029028
  11.  .2616802
  17.  1.148607
  25.  1.356784
  35.  1.513596
  42.  1.959383
  51.   2.56437
  58.  4.314678
  67.  5.044658
  75.  5.573168
  82.  6.068974
  91.  6.126449
 100.  6.851311
 105.  6.934737
```

113. 7.144746
121. 7.850551
130. 9.29684
137. 9.45194
145. 9.617169
153. 9.773557
161. 9.841335
169. 10.90775
179. 11.88101
185. 13.08582
194. 13.51759
201. 13.82167
209. 15.65352
217. 16.45001
225. 16.89468
233. 17.98553
243. 19.01273
249. 20.30895
259. 22.38243
266. 22.54469
273. 22.99361
282. 23.50064
289. 25.55475
299. 26.49018
305. 27.07291
313. 27.71446
322. 28.52735
331. 29.13409
338. 29.15594
346. 29.30121
353. 29.41489
361. 31.95446
372. 33.70127
377. 34.19159
386. 34.44109
394. 34.52613
405. 34.79233
409. 35.01623
417. 35.19645
428. 35.29808
433. 35.34549
441. 35.92644
449. 36.0816
459. 36.26842
465. 36.57066
473. 36.71273
481. 37.11623
489. 37.16852
497. 37.84037
505. 38.67687
515. 39.0804
525. 39.0804
529. 39.16542
537. 39.73361

545. 39.90542
553. 39.93228
561. 40.41856
569. 40.50674
577. 40.67719
585. 40.87782
593. 41.87543
601. 42.05271
609. 42.62816
619. 42.76234
625. 43.04337
633. 43.61636
643. 44.85317
649. 45.34781
664. 47.31576
667. 47.32227
675. 47.43453
681. 47.51411
691. 47.60146
697. 47.74273
706. 48.01052
713. 48.37134
721. 48.95049
729. 49.20879
738. 49.67254
750. 50.17035
755. 50.18336
761. 50.6054
771. 50.87139
779. 51.13081
785. 51.27917
793. 51.53509
803. 51.89729
809. 51.91639
819. 52.42535
825. 54.0091
833. 54.35796
841. 54.4691
849. 54.76291
858. 55.77032
866. 55.77996
873. 55.85318
881. 56.20667
894. 56.82759
897. 56.91237
906. 57.34697
913. 57.48961
921. 57.55368
929. 58.49834
940. 58.83006
945. 58.84001
953. 59.41582
963. 60.38633
969. 60.81244

```
 977.  61.46294
 985.  61.54268
 993.  62.27814
1001.  63.01359
1009.  63.22519
1017.  63.43531
1026.  63.65471
1033.  63.78651
1042.  64.19627
1049.  64.26251
1057.  64.69782
1065.  64.96898
1073.   65.0643
1081.  65.53507
1089.  65.84801
1098.  65.89464
1105.  65.92741
1115.  66.02911
1121.  66.19347
1129.  66.32731
1141.  67.35619
1146.  67.35619
1155.  67.35861

188. graph err2 if time==43, histogram bin(8) normal freq xlab(-2.0,-1.0,0,1.0,2.0
  > );

.
end of do-file

.

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```

Statistics/Data Analysis

```
1. set more 1;

2. gen annex1 = counindx == 54| counindx == 67| counindx == 72| counindx == 95|
 > counindx == 116| counindx == 117| counindx == 118| counindx == 120| counindx
 > == 121|
 > counindx == 122| counindx == 123| counindx == 124| counindx == 125| counindx
 > == 126|
 > counindx == 127| counindx == 128| counindx == 129| counindx == 130| counindx
 > == 131|
 > counindx == 133| counindx == 134| counindx == 135| counindx == 136| counindx
 > == 137|
 > counindx == 138| counindx == 139| counindx == 140| counindx == 142| counindx
 > == 143|
 > counindx == 144| counindx == 145| counindx == 147;

3. generate dev = popgdp[_n+20] if time==1;
(6403 missing values generated)

4. replace dev = popgdp[_n+19] if time==2;
(133 real changes made)

5. replace dev = popgdp[_n+18] if time==3;
(133 real changes made)

6. replace dev = popgdp[_n+17] if time==4;
(133 real changes made)

7. replace dev = popgdp[_n+16] if time==5;
(133 real changes made)

8. replace dev = popgdp[_n+15] if time==6;
(133 real changes made)

9. replace dev = popgdp[_n+14] if time==7;
(133 real changes made)

10. replace dev = popgdp[_n+13] if time==8;
(133 real changes made)

11. replace dev = popgdp[_n+12] if time==9;
(133 real changes made)

12. replace dev = popgdp[_n+11] if time==10;
(133 real changes made)

13. replace dev = popgdp[_n+10] if time==11;
(133 real changes made)

14. replace dev = popgdp[_n+9] if time==12;
(133 real changes made)

15. replace dev = popgdp[_n+8] if time==13;
```

(133 real changes made)

16. **replace dev = popgdp[_n+7] if time==14;**
(133 real changes made)

17. **replace dev = popgdp[_n+6] if time==15;**
(133 real changes made)

18. **replace dev = popgdp[_n+5] if time==16;**
(133 real changes made)

19. **replace dev = popgdp[_n+4] if time==17;**
(133 real changes made)

20. **replace dev = popgdp[_n+3] if time==18;**
(133 real changes made)

21. **replace dev = popgdp[_n+2] if time==19;**
(133 real changes made)

22. **replace dev = popgdp[_n+1] if time==20;**
(133 real changes made)

23. **replace dev = popgdp if time==21;**
(133 real changes made)

24. **replace dev = popgdp[_n-1] if time==22;**
(133 real changes made)

25. **replace dev = popgdp[_n-2] if time==23;**
(133 real changes made)

26. **replace dev = popgdp[_n-3] if time==24;**
(133 real changes made)

27. **replace dev = popgdp[_n-4] if time==25;**
(133 real changes made)

28. **replace dev = popgdp[_n-5] if time==26;**
(133 real changes made)

29. **replace dev = popgdp[_n-6] if time==27;**
(133 real changes made)

30. **replace dev = popgdp[_n-7] if time==28;**
(133 real changes made)

31. **replace dev = popgdp[_n-8] if time==29;**
(133 real changes made)

32. **replace dev = popgdp[_n-9] if time==30;**
(133 real changes made)

33. **replace dev = popgdp[_n-10] if time==31;**

(133 real changes made)

34. **replace dev = popgdp[_n-11] if time==32;**
(133 real changes made)

35. **replace dev = popgdp[_n-12] if time==33;**
(133 real changes made)

36. **replace dev = popgdp[_n-13] if time==34;**
(133 real changes made)

37. **replace dev = popgdp[_n-14] if time==35;**
(133 real changes made)

38. **replace dev = popgdp[_n-15] if time==36;**
(133 real changes made)

39. **replace dev = popgdp[_n-16] if time==37;**
(133 real changes made)

40. **replace dev = popgdp[_n-17] if time==38;**
(133 real changes made)

41. **replace dev = popgdp[_n-18] if time==39;**
(133 real changes made)

42. **replace dev = popgdp[_n-19] if time==40;**
(133 real changes made)

43. **replace dev = popgdp[_n-20] if time==41;**
(133 real changes made)

44. **replace dev = popgdp[_n-21] if time==42;**
(133 real changes made)

45. **replace dev = popgdp[_n-22] if time==43;**
(133 real changes made)

46. **generate dev2 = popgdp[_n+30] if time==1;**
(6394 missing values generated)

47. **replace dev2 = popgdp[_n+29] if time==2;**
(142 real changes made)

48. **replace dev2 = popgdp[_n+28] if time==3;**
(142 real changes made)

49. **replace dev2 = popgdp[_n+27] if time==4;**
(142 real changes made)

50. **replace dev2 = popgdp[_n+26] if time==5;**
(142 real changes made)

51. **replace dev2 = popgdp[_n+25] if time==6;**

(142 real changes made)

52. **replace dev2 = popgdp[_n+24] if time==7;**
(142 real changes made)

53. **replace dev2 = popgdp[_n+23] if time==8;**
(142 real changes made)

54. **replace dev2 = popgdp[_n+22] if time==9;**
(142 real changes made)

55. **replace dev2 = popgdp[_n+21] if time==10;**
(142 real changes made)

56. **replace dev2 = popgdp[_n+20] if time==11;**
(142 real changes made)

57. **replace dev2 = popgdp[_n+19] if time==12;**
(142 real changes made)

58. **replace dev2 = popgdp[_n+18] if time==13;**
(142 real changes made)

59. **replace dev2 = popgdp[_n+17] if time==14;**
(142 real changes made)

60. **replace dev2 = popgdp[_n+16] if time==15;**
(142 real changes made)

61. **replace dev2 = popgdp[_n+15] if time==16;**
(142 real changes made)

62. **replace dev2 = popgdp[_n+14] if time==17;**
(142 real changes made)

63. **replace dev2 = popgdp[_n+13] if time==18;**
(142 real changes made)

64. **replace dev2 = popgdp[_n+12] if time==19;**
(142 real changes made)

65. **replace dev2 = popgdp[_n+11] if time==20;**
(142 real changes made)

66. **replace dev2 = popgdp[_n+10] if time==21;**
(142 real changes made)

67. **replace dev2 = popgdp[_n+9] if time==22;**
(142 real changes made)

68. **replace dev2 = popgdp[_n+8] if time==23;**
(142 real changes made)

69. **replace dev2 = popgdp[_n+7] if time==24;**

(142 real changes made)

70. **replace dev2 = popgdp[_n+6] if time==25;**
(142 real changes made)

71. **replace dev2 = popgdp[_n+5] if time==26;**
(142 real changes made)

72. **replace dev2 = popgdp[_n+4] if time==27;**
(142 real changes made)

73. **replace dev2 = popgdp[_n+3] if time==28;**
(142 real changes made)

74. **replace dev2 = popgdp[_n+2] if time==29;**
(142 real changes made)

75. **replace dev2 = popgdp[_n+1] if time==30;**
(142 real changes made)

76. **replace dev2 = popgdp if time==31;**
(142 real changes made)

77. **replace dev2 = popgdp[_n-1] if time==32;**
(142 real changes made)

78. **replace dev2 = popgdp[_n-2] if time==33;**
(142 real changes made)

79. **replace dev2 = popgdp[_n-3] if time==34;**
(142 real changes made)

80. **replace dev2 = popgdp[_n-4] if time==35;**
(142 real changes made)

81. **replace dev2 = popgdp[_n-5] if time==36;**
(142 real changes made)

82. **replace dev2 = popgdp[_n-6] if time==37;**
(142 real changes made)

83. **replace dev2 = popgdp[_n-7] if time==38;**
(142 real changes made)

84. **replace dev2 = popgdp[_n-8] if time==39;**
(142 real changes made)

85. **replace dev2 = popgdp[_n-9] if time==40;**
(142 real changes made)

86. **replace dev2 = popgdp[_n-10] if time==41;**
(142 real changes made)

87. **replace dev2 = popgdp[_n-11] if time==42;**

(142 real changes made)

```
88. replace dev2 = popgdp[_n-12] if time==43;
(142 real changes made)

89. gen devdum = dev >= 4000;

90. gen devduma = dev2 >=1610;

91. gen devdumb = dev2 >=4500;

92. gen afrdum = counindx<=50;

93. gen namdum = counindx<=72;

94. replace namdum = 0 if counindx<=50;
(2149 real changes made)

95. gen samdum = counindx<=84;

96. replace samdum = 0 if counindx<=72;
(3095 real changes made)

97. gen asiadum = counindx<=115;

98. replace asiadum = 0 if counindx<=84;
(3611 real changes made)

99. gen eurodum = counindx<=144;

100. replace eurodum = 0 if counindx<=115;
(4944 real changes made)

101. gen ausdum = counindx<=152;

102. replace ausdum = 0 if counindx<=144;
(6191 real changes made)

103. gen inv = (invest/100);
(1496 missing values generated)

104. generate la5emis = ln((totalcd + totalcd[_n-1] + totalcd[_n-2] + totalcd[_n-3
  > ] +
  > totalcd[_n-4])/5000);
(544 missing values generated)

105. generate lgdpl5 = ln(gdp_ppp[_n-5]);
(1501 missing values generated)

106. generate lgdpl6 = ln(gdp_ppp[_n-6]);
(1502 missing values generated)

107. generate lpopl5 = ln(pop[_n-5]);
(1466 missing values generated)
```

```
108. gen devdum2 = (devdum*lgdpl5);
(1501 missing values generated)

109. gen devdum3a = (devduma*lgdpl5);
(1501 missing values generated)

110. gen devdum3b = (devdumb*lgdpl5);
(1501 missing values generated)

111. generate timesq = time*time;

112. gen trend = time;

113. gen trend2 = (trend*lgdpl5);
(1501 missing values generated)

114. drop if counindx==23;
(43 observations deleted)

115. drop if counindx==32;
(43 observations deleted)

116. drop if counindx==59;
(43 observations deleted)

117. drop if counindx==68;
(43 observations deleted)

118. drop if counindx==99;
(43 observations deleted)

119. drop if counindx==101;
(43 observations deleted)

120. drop if counindx==151;
(43 observations deleted)

121. drop if time==42;
(145 observations deleted)

122. drop if time==41;
(145 observations deleted)

123. drop if time==40;
(145 observations deleted)

124. drop if time==39;
(145 observations deleted)

125. drop if time==37;
(145 observations deleted)

126. drop if time==36;
```

(145 observations deleted)

127. **drop if time==35;**
(145 observations deleted)

128. **drop if time==34;**
(145 observations deleted)

129. **drop if time==32;**
(145 observations deleted)

130. **drop if time==31;**
(145 observations deleted)

131. **drop if time==30;**
(145 observations deleted)

132. **drop if time==29;**
(145 observations deleted)

133. **drop if time==27;**
(145 observations deleted)

134. **drop if time==26;**
(145 observations deleted)

135. **drop if time==25;**
(145 observations deleted)

136. **drop if time==24;**
(145 observations deleted)

137. **drop if time==22;**
(145 observations deleted)

138. **drop if time==21;**
(145 observations deleted)

139. **drop if time==20;**
(145 observations deleted)

140. **drop if time==19;**
(145 observations deleted)

141. **drop if time==17;**
(145 observations deleted)

142. **drop if time==16;**
(145 observations deleted)

143. **drop if time==15;**
(145 observations deleted)

144. **drop if time==14;**

(145 observations deleted)

```
145. drop if time==12;
(145 observations deleted)

146. drop if time==11;
(145 observations deleted)

147. drop if time==10;
(145 observations deleted)

148. drop if time==9;
(145 observations deleted)

149. drop if time==7;
(145 observations deleted)

150. drop if time==6;
(145 observations deleted)

151. drop if time==5;
(145 observations deleted)

152. drop if time==4;
(145 observations deleted)

153. drop if time==3;
(145 observations deleted)

154. drop if time==2;
(145 observations deleted)

155. drop if time==1;
(144 observations deleted)

156. set matsize 300;

157. generate time2=1 if time==8;
(1015 missing values generated)

158. replace time2=2 if time==13;
(145 real changes made)

159. replace time2=3 if time==18;
(145 real changes made)

160. replace time2=4 if time==23;
(145 real changes made)

161. replace time2=5 if time==28;
(145 real changes made)

162. replace time2=6 if time==33;
(145 real changes made)
```

163. replace time2=7 if time==38;
(145 real changes made)

164. replace time2=8 if time==43;
(145 real changes made)

165. generate time2sq = time2*time2;

166. tab counindx, generate(count);

counindx	Freq.	Percent	Cum.
1	8	0.69	0.69
2	8	0.69	1.38
3	8	0.69	2.07
4	8	0.69	2.76
5	8	0.69	3.45
6	8	0.69	4.14
7	8	0.69	4.83
8	8	0.69	5.52
9	8	0.69	6.21
10	8	0.69	6.90
11	8	0.69	7.59
12	8	0.69	8.28
13	8	0.69	8.97
14	8	0.69	9.66
15	8	0.69	10.34
16	8	0.69	11.03
17	8	0.69	11.72
18	8	0.69	12.41
19	8	0.69	13.10
20	8	0.69	13.79
21	8	0.69	14.48
22	8	0.69	15.17
24	8	0.69	15.86
25	8	0.69	16.55
26	8	0.69	17.24
27	8	0.69	17.93
28	8	0.69	18.62
29	8	0.69	19.31
30	8	0.69	20.00
31	8	0.69	20.69
33	8	0.69	21.38
34	8	0.69	22.07
35	8	0.69	22.76
36	8	0.69	23.45
37	8	0.69	24.14
38	8	0.69	24.83
39	8	0.69	25.52
40	8	0.69	26.21
41	8	0.69	26.90
42	8	0.69	27.59
43	8	0.69	28.28

44	8	0.69	28.97
45	8	0.69	29.66
46	8	0.69	30.34
47	8	0.69	31.03
48	8	0.69	31.72
49	8	0.69	32.41
50	8	0.69	33.10
51	8	0.69	33.79
52	8	0.69	34.48
53	8	0.69	35.17
54	8	0.69	35.86
55	8	0.69	36.55
56	8	0.69	37.24
57	8	0.69	37.93
58	8	0.69	38.62
60	8	0.69	39.31
61	8	0.69	40.00
62	8	0.69	40.69
63	8	0.69	41.38
64	8	0.69	42.07
65	8	0.69	42.76
66	8	0.69	43.45
67	8	0.69	44.14
69	8	0.69	44.83
70	8	0.69	45.52
71	8	0.69	46.21
72	8	0.69	46.90
73	8	0.69	47.59
74	8	0.69	48.28
75	8	0.69	48.97
76	8	0.69	49.66
77	8	0.69	50.34
78	8	0.69	51.03
79	8	0.69	51.72
80	8	0.69	52.41
81	8	0.69	53.10
82	8	0.69	53.79
83	8	0.69	54.48
84	8	0.69	55.17
85	8	0.69	55.86
86	8	0.69	56.55
87	8	0.69	57.24
88	8	0.69	57.93
89	8	0.69	58.62
90	8	0.69	59.31
91	8	0.69	60.00
92	8	0.69	60.69
93	8	0.69	61.38
94	8	0.69	62.07
95	8	0.69	62.76
96	8	0.69	63.45
97	8	0.69	64.14
98	8	0.69	64.83
100	8	0.69	65.52

102	8	0.69	66.21
103	8	0.69	66.90
104	8	0.69	67.59
105	8	0.69	68.28
106	8	0.69	68.97
107	8	0.69	69.66
108	8	0.69	70.34
109	8	0.69	71.03
110	8	0.69	71.72
111	8	0.69	72.41
112	8	0.69	73.10
113	8	0.69	73.79
114	8	0.69	74.48
115	8	0.69	75.17
116	8	0.69	75.86
117	8	0.69	76.55
118	8	0.69	77.24
119	8	0.69	77.93
120	8	0.69	78.62
121	8	0.69	79.31
122	8	0.69	80.00
123	8	0.69	80.69
124	8	0.69	81.38
125	8	0.69	82.07
126	8	0.69	82.76
127	8	0.69	83.45
128	8	0.69	84.14
129	8	0.69	84.83
130	8	0.69	85.52
131	8	0.69	86.21
132	8	0.69	86.90
133	8	0.69	87.59
134	8	0.69	88.28
135	8	0.69	88.97
136	8	0.69	89.66
137	8	0.69	90.34
138	8	0.69	91.03
139	8	0.69	91.72
140	8	0.69	92.41
141	8	0.69	93.10
142	8	0.69	93.79
143	8	0.69	94.48
144	8	0.69	95.17
145	8	0.69	95.86
146	8	0.69	96.55
147	8	0.69	97.24
148	8	0.69	97.93
149	8	0.69	98.62
150	8	0.69	99.31
152	8	0.69	100.00
Total	1160	100.00	

167. xtreg la5emis lgdpl5 lgdpl6 lpopl5 devdum3a devdum3b time2 if time<=42, fe i(

> counindx);

```
                                                Fixed-effects (within) regression
sd(u_counindx)                 =  1.921222      Number of obs =       770
sd(e_counindx_t)               =  .2802537                 n =       140
sd(e_counindx_t + u_counindx)= 1.941555                T-bar =       5.5

corr(u_counindx, Xb)           =   -0.4333      R-sq within   =    0.7885
                                                     between  =    0.5412
                                                     overall  =    0.5528

                                                F(  6,    624) =    387.73
                                                     Prob > F =    0.0000
```

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	1.275987	.1984569	6.430	0.000	.8862628	1.665711
lgdpl6	-.3265075	.2017174	-1.619	0.106	-.7226346	.0696197
lpopl5	.6975545	.1413454	4.935	0.000	.4199843	.9751246
devdum3a	-.0326861	.0672663	-0.486	0.627	-.1647817	.0994096
devdum3b	-.1600688	.0582357	-2.749	0.006	-.2744306	-.0457071
time2	-.0071383	.0185945	-0.384	0.701	-.0436537	.0293771
_cons	-13.61508	1.161212	-11.725	0.000	-15.89543	-11.33472
counindx	F(139,624) =	36.622	0.000	(140 categories)		

68. regress la5emis lgdpl5 lgdpl6 lpopl5 devdum3a devdum3b time2 count* if time< > =42, noconstant;

Source	SS	df	MS		
Model	5193.02287	146	35.5686498	Number of obs =	770
Residual	49.0103046	624	.078542155	F(146, 624) =	452.86
Total	5242.03317	770	6.80783529	Prob > F =	0.0000
				R-squared =	0.9907
				Adj R-squared =	0.9885
				Root MSE =	.28025

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	1.275987	.1984569	6.430	0.000	.8862627	1.665711
lgdpl6	-.3265072	.2017174	-1.619	0.106	-.7226344	.06962
lpopl5	.6975545	.1413453	4.935	0.000	.4199844	.9751247
devdum3a	-.0326861	.0672663	-0.486	0.627	-.1647818	.0994096
devdum3b	-.1600689	.0582357	-2.749	0.006	-.2744306	-.0457072
time2	-.0071383	.0185945	-0.384	0.701	-.0436537	.0293771
count1	-14.08276	1.202551	-11.711	0.000	-16.44429	-11.72122
count2	-14.35841	1.14143	-12.579	0.000	-16.59992	-12.1169
count3	-15.582	1.035865	-15.042	0.000	-17.6162	-13.54779
count4	-12.69734	.8137596	-15.603	0.000	-14.29538	-11.0993
count5	-16.28297	1.115167	-14.601	0.000	-18.4729	-14.09303
count6	-16.5783	1.048855	-15.806	0.000	-18.63801	-14.51858
count7	-15.42141	1.155862	-13.342	0.000	-17.69126	-13.15156
count8	-12.83881	.6968413	-18.424	0.000	-14.20725	-11.47038

count9	-15.44342	.9765903	-15.814	0.000	-17.36122	-13.52562
count10	-16.22547	1.064731	-15.239	0.000	-18.31636	-14.13458
count11	-13.69294	.706312	-19.387	0.000	-15.07997	-12.3059
count12	-13.68691	.8836868	-15.488	0.000	-15.42227	-11.95155
count13	-12.2514	.7123415	-17.199	0.000	-13.65027	-10.85252
count14	-14.71969	1.305586	-11.274	0.000	-17.28356	-12.15581
count15	-16.99903	1.328529	-12.795	0.000	-19.60796	-14.39011
count16	-10.65084	.9910847	-10.747	0.000	-12.59711	-8.704579
count17	-13.78807	.7918167	-17.413	0.000	-15.34302	-12.23312
count18	-15.27911	1.189386	-12.846	0.000	-17.61479	-12.94343
count19	-14.7464	1.078184	-13.677	0.000	-16.86371	-12.62909
count20	-13.84264	.8155087	-16.974	0.000	-15.44411	-12.24117
count21	-14.66606	1.083004	-13.542	0.000	-16.79284	-12.53929
count22	-15.04965	1.222071	-12.315	0.000	-17.44952	-12.64978
count23	-13.1652	.9431566	-13.959	0.000	-15.01734	-11.31305
count24	-15.97801	1.16292	-13.740	0.000	-18.26172	-13.69429
count25	-15.28948	1.095696	-13.954	0.000	-17.44118	-13.13778
count26	-15.99452	1.10922	-14.420	0.000	-18.17278	-13.81627
count27	-13.71398	.9232666	-14.854	0.000	-15.52707	-11.9009
count28	-13.93995	.830643	-16.782	0.000	-15.57114	-12.30876
count29	-14.89803	1.206297	-12.350	0.000	-17.26692	-12.52914
count30	-15.78791	1.213493	-13.010	0.000	-18.17094	-13.40489
count31	-15.83962	1.086973	-14.572	0.000	-17.97419	-13.70505
count32	-16.08216	1.446686	-11.117	0.000	-18.92312	-13.2412
count33	-12.67867	.7476191	-16.959	0.000	-14.14683	-11.21052
count34	-16.58702	1.07002	-15.502	0.000	-18.68829	-14.48574
count35	-14.75592	1.104405	-13.361	0.000	-16.92472	-12.58711
count36	-11.42308	.4760077	-23.998	0.000	-12.35785	-10.48831
count37	-15.09324	1.035276	-14.579	0.000	-17.12629	-13.06019
count38	-16.01536	1.088253	-14.717	0.000	-18.15245	-13.87828
count39	-13.24221	1.264772	-10.470	0.000	-15.72593	-10.75848
count40	-15.89642	1.27249	-12.492	0.000	-18.3953	-13.39754
count41	-12.98797	.7518293	-17.275	0.000	-14.46439	-11.51155
count42	-15.34371	1.246569	-12.309	0.000	-17.79169	-12.89573
count43	-14.37684	.980746	-14.659	0.000	-16.3028	-12.45088
count44	-13.87575	1.068918	-12.981	0.000	-15.97486	-11.77664
count45	-16.3145	1.190517	-13.704	0.000	-18.65241	-13.9766
count46	-15.79359	1.294997	-12.196	0.000	-18.33667	-13.25051
count47	-13.98868	1.103505	-12.677	0.000	-16.15571	-11.82165
count48	-13.48064	1.13609	-11.866	0.000	-15.71166	-11.24961
count49	-10.37095	.8793292	-11.794	0.000	-12.09775	-8.644143
count50	-11.10641	.8578428	-12.947	0.000	-12.79102	-9.421799
count51	-12.18067	.6368784	-19.126	0.000	-13.43135	-10.92998
count52	-11.69626	1.588968	-7.361	0.000	-14.81663	-8.57589
count53	-13.83271	.9219551	-15.004	0.000	-15.64322	-12.0222
count54	(dropped)					
count55	-14.0457	1.043212	-13.464	0.000	-16.09433	-11.99707
count56	-14.57653	1.013017	-14.389	0.000	-16.56587	-12.5872
count57	-14.77886	1.067203	-13.848	0.000	-16.8746	-12.68311
count58	-15.76416	1.101635	-14.310	0.000	-17.92752	-13.6008
count59	-14.20538	1.030616	-13.783	0.000	-16.22927	-12.18148
count60	-12.65831	.9392107	-13.478	0.000	-14.50271	-10.81392
count61	-13.16265	1.69124	-7.783	0.000	-16.48386	-9.841437
count62	-14.02119	.9510603	-14.743	0.000	-15.88886	-12.15353

count63	-13.0623	.9074243	-14.395	0.000	-14.84428	-11.28033
count64	-11.40203	1.24665	-9.146	0.000	-13.85017	-8.953893
count65	(dropped)					
count66	(dropped)					
count67	-10.59239	1.085185	-9.761	0.000	-12.72345	-8.461333
count68	-12.63617	1.959264	-6.449	0.000	-16.48372	-8.788617
count69	-12.80646	1.589388	-8.057	0.000	-15.92765	-9.685258
count70	-14.26067	1.044071	-13.659	0.000	-16.31098	-12.21035
count71	-15.96507	1.44987	-11.011	0.000	-18.81228	-13.11785
count72	-14.02833	1.15222	-12.175	0.000	-16.29102	-11.76563
count73	-14.57507	1.24893	-11.670	0.000	-17.02769	-12.12246
count74	-14.3412	1.088074	-13.180	0.000	-16.47793	-12.20447
count75	-11.97581	.7915778	-15.129	0.000	-13.53028	-10.42133
count76	-14.53618	.963881	-15.081	0.000	-16.42902	-12.64334
count77	-14.65432	1.193834	-12.275	0.000	-16.99874	-12.3099
count78	-11.23345	.7189209	-15.625	0.000	-12.64525	-9.821652
count79	-12.25207	1.242139	-9.864	0.000	-14.69135	-9.81279
count80	-11.80011	1.461297	-8.075	0.000	-14.66977	-8.930456
count81	-9.411799	.930753	-10.112	0.000	-11.23959	-7.584012
count82	-18.39245	1.479134	-12.435	0.000	-21.29713	-15.48777
count83	(dropped)					
count84	-16.41733	1.810048	-9.070	0.000	-19.97186	-12.86281
count85	-12.20084	1.30695	-9.335	0.000	-14.76739	-9.634282
count86	-17.35512	1.759647	-9.863	0.000	-20.81067	-13.89957
count87	-16.41841	1.552211	-10.577	0.000	-19.4666	-13.37022
count88	-14.60403	1.301168	-11.224	0.000	-17.15922	-12.04883
count89	-12.43524	1.432995	-8.678	0.000	-15.24932	-9.621164
count90	-11.38744	1.257397	-9.056	0.000	-13.85668	-8.918197
count91	-13.03313	1.824661	-7.143	0.000	-16.61635	-9.449908
count92	-13.16379	.9391302	-14.017	0.000	-15.00803	-11.31955
count93	-14.3993	1.303788	-11.044	0.000	-16.95964	-11.83896
count94	-10.55621	1.18504	-8.908	0.000	-12.88336	-8.229062
count95	-14.27276	1.179269	-12.103	0.000	-16.58858	-11.95695
count96	-15.85654	1.327985	-11.940	0.000	-18.4644	-13.24868
count97	-17.54706	1.227812	-14.291	0.000	-19.9582	-15.13592
count98	-10.60774	1.059704	-10.010	0.000	-12.68876	-8.526722
count99	-16.09677	1.458261	-11.038	0.000	-18.96047	-13.23308
count100	-15.48807	1.322915	-11.708	0.000	-18.08598	-12.89017
count101	-9.366511	.9463286	-9.898	0.000	-11.22489	-7.508137
count102	-11.61491	1.39846	-8.305	0.000	-14.36116	-8.868648
count103	-10.63189	1.184972	-8.972	0.000	-12.9589	-8.30487
count104	-15.52372	1.178246	-13.175	0.000	-17.83753	-13.20992
count105	-14.08428	1.1046	-12.751	0.000	-16.25346	-11.91509
count106	-13.85903	1.197788	-11.571	0.000	-16.21121	-11.50684
count107	-15.71157	1.316452	-11.935	0.000	-18.29678	-13.12636
count108	-10.25713	1.163883	-8.813	0.000	-12.54274	-7.971531
count109	-15.03621	1.163335	-12.925	0.000	-17.32073	-12.75168
count110	-11.85534	1.417491	-8.364	0.000	-14.63897	-9.071709
count111	-11.39938	1.462378	-7.795	0.000	-14.27116	-8.5276
count112	-12.79613	1.14208	-11.204	0.000	-15.03891	-10.55334
count113	-10.99343	.9968202	-11.029	0.000	-12.95096	-9.035904
count114	-12.30411	1.203641	-10.222	0.000	-14.66779	-9.940433
count115	-11.37376	1.36051	-8.360	0.000	-14.04549	-8.702026
count116	-11.60134	1.344658	-8.628	0.000	-14.24194	-8.960734

count117	-12.62238	1.724556	-7.319	0.000	-16.00902	-9.235743
count118	-11.13677	1.526479	-7.296	0.000	-14.13442	-8.139109
count119	-12.30565	1.751424	-7.026	0.000	-15.74505	-8.866246
count120	-12.25848	1.421872	-8.621	0.000	-15.05071	-9.466244
count121	-11.49715	1.439999	-7.984	0.000	-14.32498	-8.669316
count122	-9.996991	.8468583	-11.805	0.000	-11.66003	-8.333953
count123	-11.21371	1.266505	-8.854	0.000	-13.70084	-8.726586
count124	-13.07437	1.727116	-7.570	0.000	-16.46603	-9.682701
count125	-8.994243	.9452501	-9.515	0.000	-10.8505	-7.137987
count126	-11.7883	.7149268	-16.489	0.000	-13.19226	-10.38435
count127	-11.86713	1.507564	-7.872	0.000	-14.82764	-8.906615
count128	-11.67171	1.318837	-8.850	0.000	-14.26161	-9.081815
count129	-13.37897	1.310234	-10.211	0.000	-15.95197	-10.80597
count130	-12.61473	1.423174	-8.864	0.000	-15.40952	-9.819939
count131	-12.61059	1.305847	-9.657	0.000	-15.17498	-10.0462
count132	-12.94029	1.644327	-7.870	0.000	-16.16937	-9.7112
count133	-11.85966	1.441075	-8.230	0.000	-14.68961	-9.02972
count134	-12.28081	1.400399	-8.770	0.000	-15.03088	-9.530747
count135	-15.03125	1.320208	-11.386	0.000	-17.62383	-12.43866
count136	-12.2965	1.741561	-7.061	0.000	-15.71653	-8.87647
count137	-12.51735	1.947185	-6.428	0.000	-16.34117	-8.693517
count138	-12.28086	1.548356	-7.932	0.000	-15.32148	-9.24024
count139	-11.66767	1.5048	-7.754	0.000	-14.62275	-8.712581
count140	-12.94212	.7730948	-16.741	0.000	-14.4603	-11.42393
count141	-11.66278	1.267656	-9.200	0.000	-14.15217	-9.173394
count142	-14.33854	.9711092	-14.765	0.000	-16.24557	-12.4315
count143	-12.56596	.7293703	-17.228	0.000	-13.99827	-11.13364
count144	(dropped)					
count145	-11.99758	.6313993	-19.002	0.000	-13.2375	-10.75766

169. predict pla5emis;
(237 missing values generated)

170. predict se_emis, stdf;
(237 missing values generated)

171. generate u = pla5emis-la5emis;
(259 missing values generated)

172. list coun year pla5emis la5emis u se_emis if counindx==88;

	coun	year	pla5emis	la5emis	u	se_emis
665.	CHINA	1992	6.644192	6.518021	.1261711	.3117886
666.	CHINA	1962	.	5.11556	.	.
667.	CHINA	1957	.	3.968974	.	.
668.	CHINA	1977	5.743951	5.733543	.0104079	.3071236
669.	CHINA	1987	6.269413	6.274206	-.0047932	.308694

670.	CHINA	1967	4.857075	4.844869	.0122066	.3093869
671.	CHINA	1972	5.338136	5.294098	.0440373	.3073798
672.	CHINA	1982	5.961212	6.02307	-.0618587	.3075254

173. list coun year pla5emis la5emis u se_emis if counindx==90;

	coun	year	pla5emis	la5emis	u	se_emis
681.	INDIA	1992	5.098367	5.236049	-.137682	.3032553
682.	INDIA	1972	3.951681	3.99889	-.0472097	.2999231
683.	INDIA	1957	3.351385	3.157894	.1934917	.3012527
684.	INDIA	1977	4.216763	4.255882	-.0391192	.2998946
685.	INDIA	1982	4.505651	4.575284	-.0696335	.3004249
686.	INDIA	1967	3.829765	3.802467	.0272977	.2998146
687.	INDIA	1962	3.587895	3.510835	.0770605	.3003475
688.	INDIA	1987	4.759158	4.901045	-.1418872	.3013212

174. list coun year pla5emis la5emis u se_emis if counindx==64;

	coun	year	pla5emis	la5emis	u	se_emis
481.	MEXICO	1992	4.414862	4.441646	-.0267844	.303312
482.	MEXICO	1977	3.787077	3.748322	.0387547	.3002519
483.	MEXICO	1967	3.072648	3.050069	.0225794	.3000919
484.	MEXICO	1957	2.453383	2.41135	.0420337	.303558
485.	MEXICO	1987	4.344697	4.338542	.006155	.303276
486.	MEXICO	1982	4.053843	4.248595	-.1947527	.3012004
487.	MEXICO	1972	3.467196	3.374826	.0923705	.2997071
488.	MEXICO	1962	2.803827	2.810968	-.0071409	.3012621

175. gen err = (pla5emis - la5emis);
(259 missing values generated)

176. gen p5emis = exp(pla5emis);
(237 missing values generated)

```
177. gen a5emis = exp(la5emis);
(62 missing values generated)

178. gen err2 = (p5emis - a5emis)/a5emis;
(259 missing values generated)

179. gen sqerr = (pla5emis - la5emis)*(pla5emis - la5emis);
(259 missing values generated)

180. gen sumsqerr = sum(sqerr);

181. list sumsqerr if time==43;

     sumsqerr
  3.  .0002799
 11.  .3277481
 19.  1.264004
 26.  1.509429
 34.  1.686046
 42.  2.189393
 49.  2.763999
 57.  4.569046
 65.  5.323689
 73.  5.864364
 83.  6.406734
 91.  6.500598
100.  7.223989
105.  7.277538
113.  7.423136
122.  8.195734
131.  10.06563
137.  10.22794
146.  10.36653
154.  10.51949
161.  10.57426
169.  11.51574
177.  12.35228
186.  13.48551
196.  13.88093
202.  14.14059
211.  16.06358
217.  16.92596
225.  17.37736
235.  18.36547
241.  19.39633
249.  20.83271
257.    23.082
266.  23.30462
275.   23.7826
282.    24.353
291.   26.5379
297.  27.40467
305.  27.99103
```

315. 28.47977
322. 29.2117
333. 29.73882
339. 29.75045
347. 29.8726
353. 29.95461
361. 32.31709
371. 33.89391
377. 34.33636
388. 34.55204
393. 34.65544
406. 34.95424
409. 35.13277
417. 35.28703
430. 35.39412
433. 35.41327
441. 35.85392
449. 36.04076
457. 36.27034
465. 36.59679
473. 36.7989
481. 37.13813
489. 37.20035
497. 37.93623
506. 38.83656
514. 39.1775
525. 39.1775
529. 39.29234
537. 39.87175
545. 39.99599
553. 40.01602
561. 40.53079
569. 40.77407
577. 41.06842
585. 41.34655
593. 41.96487
601. 42.08982
609. 42.66391
619. 42.86818
625. 43.13602
633. 43.66139
641. 44.82202
650. 45.30042
658. 47.28451
665. 47.30043
674. 47.32962
681. 47.35551
691. 47.44151
698. 47.57755
706. 47.89331
714. 48.1651
721. 48.43111
730. 48.63893
737. 49.07499

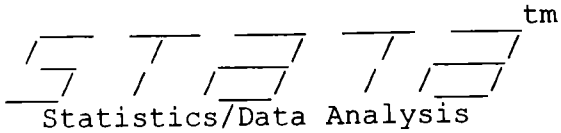
```
 745.  49.53765
 755.  49.55017
 761.  50.01045
 769.  50.31918
 777.  50.53119
 785.  50.65804
 793.  50.95378
 802.  51.32009
 809.  51.38176
 817.   52.0017
 825.  53.76771
 835.  54.11195
 841.  54.24269
 849.  54.53552
 862.  55.50426
 867.  55.50869
 873.  55.57825
 881.  55.91679
 892.  56.58685
 897.  56.67531
 905.  57.12061
 913.  57.32236
 921.  57.38405
 929.  58.32463
 940.  58.64413
 945.   58.6541
 953.  59.22773
 964.  60.19217
 969.  60.60701
 977.  61.24048
 985.  61.32112
 993.  62.04256
1001.  62.72479
1009.  62.99395
1017.  63.19652
1028.  63.43457
1033.   63.5923
1042.  64.22836
1049.  64.44476
1057.  64.86713
1065.  65.12562
1073.  65.20148
1081.  65.53958
1090.  65.83256
1098.  65.87812
1105.  65.91762
1115.  66.08113
1121.  66.34241
1131.  66.46875
1142.  67.36108
1150.  67.36108
1156.  67.36653
```

182. graph err2 if time==43, histogram bin(8) normal freq xlab(-2.0,-1.0,0,1.0,2.0

```
> );
.
end of do-file

.
```

Stata Corporation
702 University Drive East
College Station, Texas 77840
409-696-4600, fax 409-696-4601




```
1. set more 1;

2. gen annex1 = counindx == 54| counindx == 67| counindx == 72| counindx == 95|
 > counindx == 116| counindx == 117| counindx == 118| counindx == 120| counindx
 > == 121|
 > counindx == 122| counindx == 123| counindx == 124| counindx == 125| counindx
 > == 126|
 > counindx == 127| counindx == 128| counindx == 129| counindx == 130| counindx
 > == 131|
 > counindx == 133| counindx == 134| counindx == 135| counindx == 136| counindx
 > == 137|
 > counindx == 138| counindx == 139| counindx == 140| counindx == 142| counindx
 > == 143|
 > counindx == 144| counindx == 145| counindx == 147;

3. generate dev = popgdp[_n+20] if time==1;
(6403 missing values generated)

4. replace dev = popgdp[_n+19] if time==2;
(133 real changes made)

5. replace dev = popgdp[_n+18] if time==3;
(133 real changes made)

6. replace dev = popgdp[_n+17] if time==4;
(133 real changes made)

7. replace dev = popgdp[_n+16] if time==5;
(133 real changes made)

8. replace dev = popgdp[_n+15] if time==6;
(133 real changes made)

9. replace dev = popgdp[_n+14] if time==7;
(133 real changes made)

10. replace dev = popgdp[_n+13] if time==8;
(133 real changes made)

11. replace dev = popgdp[_n+12] if time==9;
(133 real changes made)

12. replace dev = popgdp[_n+11] if time==10;
(133 real changes made)

13. replace dev = popgdp[_n+10] if time==11;
(133 real changes made)

14. replace dev = popgdp[_n+9] if time==12;
(133 real changes made)

15. replace dev = popgdp[_n+8] if time==13;
```

(133 real changes made)

16. **replace dev = popgdp[_n+7] if time==14;**
(133 real changes made)

17. **replace dev = popgdp[_n+6] if time==15;**
(133 real changes made)

18. **replace dev = popgdp[_n+5] if time==16;**
(133 real changes made)

19. **replace dev = popgdp[_n+4] if time==17;**
(133 real changes made)

20. **replace dev = popgdp[_n+3] if time==18;**
(133 real changes made)

21. **replace dev = popgdp[_n+2] if time==19;**
(133 real changes made)

22. **replace dev = popgdp[_n+1] if time==20;**
(133 real changes made)

23. **replace dev = popgdp if time==21;**
(133 real changes made)

24. **replace dev = popgdp[_n-1] if time==22;**
(133 real changes made)

25. **replace dev = popgdp[_n-2] if time==23;**
(133 real changes made)

26. **replace dev = popgdp[_n-3] if time==24;**
(133 real changes made)

27. **replace dev = popgdp[_n-4] if time==25;**
(133 real changes made)

28. **replace dev = popgdp[_n-5] if time==26;**
(133 real changes made)

29. **replace dev = popgdp[_n-6] if time==27;**
(133 real changes made)

30. **replace dev = popgdp[_n-7] if time==28;**
(133 real changes made)

31. **replace dev = popgdp[_n-8] if time==29;**
(133 real changes made)

32. **replace dev = popgdp[_n-9] if time==30;**
(133 real changes made)

33. **replace dev = popgdp[_n-10] if time==31;**

(133 real changes made)

34. **replace dev = popgdp[_n-11] if time==32;**
(133 real changes made)

35. **replace dev = popgdp[_n-12] if time==33;**
(133 real changes made)

36. **replace dev = popgdp[_n-13] if time==34;**
(133 real changes made)

37. **replace dev = popgdp[_n-14] if time==35;**
(133 real changes made)

38. **replace dev = popgdp[_n-15] if time==36;**
(133 real changes made)

39. **replace dev = popgdp[_n-16] if time==37;**
(133 real changes made)

40. **replace dev = popgdp[_n-17] if time==38;**
(133 real changes made)

41. **replace dev = popgdp[_n-18] if time==39;**
(133 real changes made)

42. **replace dev = popgdp[_n-19] if time==40;**
(133 real changes made)

43. **replace dev = popgdp[_n-20] if time==41;**
(133 real changes made)

44. **replace dev = popgdp[_n-21] if time==42;**
(133 real changes made)

45. **replace dev = popgdp[_n-22] if time==43;**
(133 real changes made)

46. **generate dev2 = popgdp[_n+30] if time==1;**
(6394 missing values generated)

47. **replace dev2 = popgdp[_n+29] if time==2;**
(142 real changes made)

48. **replace dev2 = popgdp[_n+28] if time==3;**
(142 real changes made)

49. **replace dev2 = popgdp[_n+27] if time==4;**
(142 real changes made)

50. **replace dev2 = popgdp[_n+26] if time==5;**
(142 real changes made)

51. **replace dev2 = popgdp[_n+25] if time==6;**

(142 real changes made)

52. **replace dev2 = popgdp[_n+24] if time==7;**
(142 real changes made)

53. **replace dev2 = popgdp[_n+23] if time==8;**
(142 real changes made)

54. **replace dev2 = popgdp[_n+22] if time==9;**
(142 real changes made)

55. **replace dev2 = popgdp[_n+21] if time==10;**
(142 real changes made)

56. **replace dev2 = popgdp[_n+20] if time==11;**
(142 real changes made)

57. **replace dev2 = popgdp[_n+19] if time==12;**
(142 real changes made)

58. **replace dev2 = popgdp[_n+18] if time==13;**
(142 real changes made)

59. **replace dev2 = popgdp[_n+17] if time==14;**
(142 real changes made)

60. **replace dev2 = popgdp[_n+16] if time==15;**
(142 real changes made)

61. **replace dev2 = popgdp[_n+15] if time==16;**
(142 real changes made)

62. **replace dev2 = popgdp[_n+14] if time==17;**
(142 real changes made)

63. **replace dev2 = popgdp[_n+13] if time==18;**
(142 real changes made)

64. **replace dev2 = popgdp[_n+12] if time==19;**
(142 real changes made)

65. **replace dev2 = popgdp[_n+11] if time==20;**
(142 real changes made)

66. **replace dev2 = popgdp[_n+10] if time==21;**
(142 real changes made)

67. **replace dev2 = popgdp[_n+9] if time==22;**
(142 real changes made)

68. **replace dev2 = popgdp[_n+8] if time==23;**
(142 real changes made)

69. **replace dev2 = popgdp[_n+7] if time==24;**

(142 real changes made)

70. **replace dev2 = popgdp[_n+6] if time==25;**
(142 real changes made)

71. **replace dev2 = popgdp[_n+5] if time==26;**
(142 real changes made)

72. **replace dev2 = popgdp[_n+4] if time==27;**
(142 real changes made)

73. **replace dev2 = popgdp[_n+3] if time==28;**
(142 real changes made)

74. **replace dev2 = popgdp[_n+2] if time==29;**
(142 real changes made)

75. **replace dev2 = popgdp[_n+1] if time==30;**
(142 real changes made)

76. **replace dev2 = popgdp if time==31;**
(142 real changes made)

77. **replace dev2 = popgdp[_n-1] if time==32;**
(142 real changes made)

78. **replace dev2 = popgdp[_n-2] if time==33;**
(142 real changes made)

79. **replace dev2 = popgdp[_n-3] if time==34;**
(142 real changes made)

80. **replace dev2 = popgdp[_n-4] if time==35;**
(142 real changes made)

81. **replace dev2 = popgdp[_n-5] if time==36;**
(142 real changes made)

82. **replace dev2 = popgdp[_n-6] if time==37;**
(142 real changes made)

83. **replace dev2 = popgdp[_n-7] if time==38;**
(142 real changes made)

84. **replace dev2 = popgdp[_n-8] if time==39;**
(142 real changes made)

85. **replace dev2 = popgdp[_n-9] if time==40;**
(142 real changes made)

86. **replace dev2 = popgdp[_n-10] if time==41;**
(142 real changes made)

87. **replace dev2 = popgdp[_n-11] if time==42;**

(142 real changes made)

88. **replace dev2 = popgdp[_n-12] if time==43;**
(142 real changes made)

89. **gen devdum = dev >= 4000;**

90. **gen devduma = dev2 >=1610;**

91. **gen devdumb = dev2 >=4500;**

92. **gen afrdum = counindx<=50;**

93. **gen namdum = counindx<=72;**

94. **replace namdum = 0 if counindx<=50;**
(2149 real changes made)

95. **gen samdum = counindx<=84;**

96. **replace samdum = 0 if counindx<=72;**
(3095 real changes made)

97. **gen asiadum = counindx<=115;**

98. **replace asiadum = 0 if counindx<=84;**
(3611 real changes made)

99. **gen eurodum = counindx<=144;**

100. **replace eurodum = 0 if counindx<=115;**
(4944 real changes made)

101. **gen ausdum = counindx<=152;**

102. **replace ausdum = 0 if counindx<=144;**
(6191 real changes made)

103. **gen inv = (invest/100);**
(1496 missing values generated)

104. **generate la5emis = ln((totalcd + totalcd[_n-1] + totalcd[_n-2] + totalcd[_n-3**
>] +
> totalcd[_n-4])/5000);
(544 missing values generated)

105. **generate lgdpl5 = ln(gdp_ppp[_n-5]);**
(1501 missing values generated)

106. **generate lgdpl6 = ln(gdp_ppp[_n-6]);**
(1502 missing values generated)

107. **generate lpopl5 = ln(pop[_n-5]);**
(1466 missing values generated)

```
108. gen devdum2 = (devdum*lgdpl5);
(1501 missing values generated)

109. gen devdum3a = (devduma*lgdpl5);
(1501 missing values generated)

110. gen devdum3b = (devdumb*lgdpl5);
(1501 missing values generated)

111. generate timesq = time*time;

112. gen trend = time;

113. gen trend2 = (trend*lgdpl5);
(1501 missing values generated)

114. drop if counindx==23;
(43 observations deleted)

115. drop if counindx==32;
(43 observations deleted)

116. drop if counindx==59;
(43 observations deleted)

117. drop if counindx==68;
(43 observations deleted)

118. drop if counindx==99;
(43 observations deleted)

119. drop if counindx==101;
(43 observations deleted)

120. drop if counindx==151;
(43 observations deleted)

121. drop if time==42;
(145 observations deleted)

122. drop if time==41;
(145 observations deleted)

123. drop if time==40;
(145 observations deleted)

124. drop if time==39;
(145 observations deleted)

125. drop if time==37;
(145 observations deleted)

126. drop if time==36;
```

(145 observations deleted)

```
127. drop if time==35;
```
(145 observations deleted)

```
128. drop if time==34;
```
(145 observations deleted)

```
129. drop if time==32;
```
(145 observations deleted)

```
130. drop if time==31;
```
(145 observations deleted)

```
131. drop if time==30;
```
(145 observations deleted)

```
132. drop if time==29;
```
(145 observations deleted)

```
133. drop if time==27;
```
(145 observations deleted)

```
134. drop if time==26;
```
(145 observations deleted)

```
135. drop if time==25;
```
(145 observations deleted)

```
136. drop if time==24;
```
(145 observations deleted)

```
137. drop if time==22;
```
(145 observations deleted)

```
138. drop if time==21;
```
(145 observations deleted)

```
139. drop if time==20;
```
(145 observations deleted)

```
140. drop if time==19;
```
(145 observations deleted)

```
141. drop if time==17;
```
(145 observations deleted)

```
142. drop if time==16;
```
(145 observations deleted)

```
143. drop if time==15;
```
(145 observations deleted)

```
144. drop if time==14;
```

(145 observations deleted)

145. **drop if time==12;**
(145 observations deleted)

146. **drop if time==11;**
(145 observations deleted)

147. **drop if time==10;**
(145 observations deleted)

148. **drop if time==9;**
(145 observations deleted)

149. **drop if time==7;**
(145 observations deleted)

150. **drop if time==6;**
(145 observations deleted)

151. **drop if time==5;**
(145 observations deleted)

152. **drop if time==4;**
(145 observations deleted)

153. **drop if time==3;**
(145 observations deleted)

154. **drop if time==2;**
(145 observations deleted)

155. **drop if time==1;**
(144 observations deleted)

156. **set matsize 300;**

157. **generate time2=1 if time==8;**
(1015 missing values generated)

158. **replace time2=2 if time==13;**
(145 real changes made)

159. **replace time2=3 if time==18;**
(145 real changes made)

160. **replace time2=4 if time==23;**
(145 real changes made)

161. **replace time2=5 if time==28;**
(145 real changes made)

162. **replace time2=6 if time==33;**
(145 real changes made)

```
163. replace time2=7 if time==38;
(145 real changes made)

164. replace time2=8 if time==43;
(145 real changes made)

165. generate time2sq = time2*time2;

166. tab counindx, generate(count);
```

counindx	Freq.	Percent	Cum.
1	8	0.69	0.69
2	8	0.69	1.38
3	8	0.69	2.07
4	8	0.69	2.76
5	8	0.69	3.45
6	8	0.69	4.14
7	8	0.69	4.83
8	8	0.69	5.52
9	8	0.69	6.21
10	8	0.69	6.90
11	8	0.69	7.59
12	8	0.69	8.28
13	8	0.69	8.97
14	8	0.69	9.66
15	8	0.69	10.34
16	8	0.69	11.03
17	8	0.69	11.72
18	8	0.69	12.41
19	8	0.69	13.10
20	8	0.69	13.79
21	8	0.69	14.48
22	8	0.69	15.17
24	8	0.69	15.86
25	8	0.69	16.55
26	8	0.69	17.24
27	8	0.69	17.93
28	8	0.69	18.62
29	8	0.69	19.31
30	8	0.69	20.00
31	8	0.69	20.69
33	8	0.69	21.38
34	8	0.69	22.07
35	8	0.69	22.76
36	8	0.69	23.45
37	8	0.69	24.14
38	8	0.69	24.83
39	8	0.69	25.52
40	8	0.69	26.21
41	8	0.69	26.90
42	8	0.69	27.59
43	8	0.69	28.28

44	8	0.69	28.97
45	8	0.69	29.66
46	8	0.69	30.34
47	8	0.69	31.03
48	8	0.69	31.72
49	8	0.69	32.41
50	8	0.69	33.10
51	8	0.69	33.79
52	8	0.69	34.48
53	8	0.69	35.17
54	8	0.69	35.86
55	8	0.69	36.55
56	8	0.69	37.24
57	8	0.69	37.93
58	8	0.69	38.62
60	8	0.69	39.31
61	8	0.69	40.00
62	8	0.69	40.69
63	8	0.69	41.38
64	8	0.69	42.07
65	8	0.69	42.76
66	8	0.69	43.45
67	8	0.69	44.14
69	8	0.69	44.83
70	8	0.69	45.52
71	8	0.69	46.21
72	8	0.69	46.90
73	8	0.69	47.59
74	8	0.69	48.28
75	8	0.69	48.97
76	8	0.69	49.66
77	8	0.69	50.34
78	8	0.69	51.03
79	8	0.69	51.72
80	8	0.69	52.41
81	8	0.69	53.10
82	8	0.69	53.79
83	8	0.69	54.48
84	8	0.69	55.17
85	8	0.69	55.86
86	8	0.69	56.55
87	8	0.69	57.24
88	8	0.69	57.93
89	8	0.69	58.62
90	8	0.69	59.31
91	8	0.69	60.00
92	8	0.69	60.69
93	8	0.69	61.38
94	8	0.69	62.07
95	8	0.69	62.76
96	8	0.69	63.45
97	8	0.69	64.14
98	8	0.69	64.83
100	8	0.69	65.52

102	8	0.69	66.21
103	8	0.69	66.90
104	8	0.69	67.59
105	8	0.69	68.28
106	8	0.69	68.97
107	8	0.69	69.66
108	8	0.69	70.34
109	8	0.69	71.03
110	8	0.69	71.72
111	8	0.69	72.41
112	8	0.69	73.10
113	8	0.69	73.79
114	8	0.69	74.48
115	8	0.69	75.17
116	8	0.69	75.86
117	8	0.69	76.55
118	8	0.69	77.24
119	8	0.69	77.93
120	8	0.69	78.62
121	8	0.69	79.31
122	8	0.69	80.00
123	8	0.69	80.69
124	8	0.69	81.38
125	8	0.69	82.07
126	8	0.69	82.76
127	8	0.69	83.45
128	8	0.69	84.14
129	8	0.69	84.83
130	8	0.69	85.52
131	8	0.69	86.21
132	8	0.69	86.90
133	8	0.69	87.59
134	8	0.69	88.28
135	8	0.69	88.97
136	8	0.69	89.66
137	8	0.69	90.34
138	8	0.69	91.03
139	8	0.69	91.72
140	8	0.69	92.41
141	8	0.69	93.10
142	8	0.69	93.79
143	8	0.69	94.48
144	8	0.69	95.17
145	8	0.69	95.86
146	8	0.69	96.55
147	8	0.69	97.24
148	8	0.69	97.93
149	8	0.69	98.62
150	8	0.69	99.31
152	8	0.69	100.00
Total	1160	100.00	

167. **xtreg la5emis lgdpl5 lgdpl6 lpopl5 trend2 time2 if time<=42, fe i(counindx);**

Fixed-effects (within) regression

sd(u_counindx)	= 1.440139	Number of obs	= 770
sd(e_counindx_t)	= .2748887	n	= 140
sd(e_counindx_t + u_counindx)	= 1.466139	T-bar	= 5.5
corr(u_counindx, Xb)	= -0.4884	R-sq within	= 0.7962
		between	= 0.7545
		overall	= 0.7690
		F(5, 625)	= 488.34
		Prob > F	= 0.0000

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	1.322412	.1926918	6.863	0.000	.9440102	1.700814
lgdpl6	-.3332976	.1949603	-1.710	0.088	-.7161541	.049559
lpopl5	.7192757	.1234109	5.828	0.000	.4769254	.9616259
trend2	-.0036926	.0006401	-5.769	0.000	-.0049496	-.0024357
time2	.1619084	.0365114	4.434	0.000	.0902084	.2336083
_cons	-14.86721	.9994778	-14.875	0.000	-16.82995	-12.90447
counindx	F(139,625) =	38.450	0.000	(140 categories)		

168. **regress la5emis lgdpl5 lgdpl6 lpopl5 trend2 time2 count* if time<=42, nocons**
> **tant;**

Source	SS	df	MS		
Model	5194.80581	145	35.826247	Number of obs	= 770
Residual	47.2273635	625	.075563782	F(145, 625)	= 474.12
				Prob > F	= 0.0000
				R-squared	= 0.9910
				Adj R-squared	= 0.9889
Total	5242.03317	770	6.80783529	Root MSE	= .27489

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	1.322412	.1926919	6.863	0.000	.9440102	1.700814
lgdpl6	-.3332974	.1949603	-1.710	0.088	-.716154	.0495592
lpopl5	.7192757	.1234109	5.828	0.000	.4769255	.9616259
trend2	-.0036926	.0006401	-5.769	0.000	-.0049496	-.0024357
time2	.1619084	.0365114	4.434	0.000	.0902085	.2336083
count1	-14.80464	1.102611	-13.427	0.000	-16.96991	-12.63937
count2	-14.84475	.9870666	-15.039	0.000	-16.78312	-12.90638
count3	-16.08456	.8929229	-18.013	0.000	-17.83806	-14.33107
count4	-13.50238	.7423808	-18.188	0.000	-14.96025	-12.04452
count5	-16.81199	.970062	-17.331	0.000	-18.71697	-14.90702
count6	-17.12353	.911004	-18.796	0.000	-18.91253	-15.33453
count7	-15.89423	1.000126	-15.892	0.000	-17.85825	-13.93022
count8	-13.47487	.6046801	-22.284	0.000	-14.66232	-12.28742
count9	-15.98849	.8451541	-18.918	0.000	-17.64818	-14.32881
count10	-16.7565	.9226071	-18.162	0.000	-18.56829	-14.94472
count11	-14.32572	.6122758	-23.397	0.000	-15.52808	-13.12335

count12	-14.43926	.8069817	-17.893	0.000	-16.02398	-12.85454
count13	-12.89328	.6113806	-21.089	0.000	-14.09388	-11.69267
count14	-15.46988	1.192321	-12.975	0.000	-17.81132	-13.12844
count15	-17.47907	1.160198	-15.066	0.000	-19.75743	-15.20071
count16	-12.61134	.7298918	-17.278	0.000	-14.04468	-11.178
count17	-14.37777	.6840981	-21.017	0.000	-15.72118	-13.03436
count18	-15.74334	1.028932	-15.301	0.000	-17.76393	-13.72276
count19	-15.26566	.9344349	-16.337	0.000	-17.10067	-13.43065
count20	-14.44166	.7063862	-20.444	0.000	-15.82883	-13.05448
count21	-15.40499	.9903713	-15.555	0.000	-17.34985	-13.46014
count22	-15.50567	1.060101	-14.627	0.000	-17.58746	-13.42388
count23	-13.70227	.813915	-16.835	0.000	-15.30061	-12.10393
count24	-16.44724	1.004327	-16.376	0.000	-18.41951	-14.47498
count25	-15.8292	.9517764	-16.631	0.000	-17.69827	-13.96014
count26	-16.51989	.9638759	-17.139	0.000	-18.41272	-14.62707
count27	-14.26021	.7967268	-17.898	0.000	-15.82479	-12.69562
count28	-14.65115	.7655899	-19.137	0.000	-16.15459	-13.14771
count29	-15.63856	1.101982	-14.191	0.000	-17.8026	-13.47453
count30	-16.23263	1.04728	-15.500	0.000	-18.28924	-14.17601
count31	-16.35041	.9416768	-17.363	0.000	-18.19965	-14.50118
count32	-16.48993	1.256099	-13.128	0.000	-18.95661	-14.02324
count33	-13.43488	.68478	-19.619	0.000	-14.77963	-12.09013
count34	-17.10423	.9277759	-18.436	0.000	-18.92616	-15.28229
count35	-15.23368	.9524516	-15.994	0.000	-17.10407	-13.36329
count36	-12.201	.4412041	-27.654	0.000	-13.06742	-11.33458
count37	-15.59697	.8926737	-17.472	0.000	-17.34997	-13.84396
count38	-16.50804	.9403437	-17.555	0.000	-18.35465	-14.66142
count39	-13.97902	1.162803	-12.022	0.000	-16.26249	-11.69554
count40	-16.32767	1.102216	-14.813	0.000	-18.49216	-14.16317
count41	-13.76076	.6912315	-19.908	0.000	-15.11818	-12.40334
count42	-15.83423	1.094572	-14.466	0.000	-17.98372	-13.68475
count43	-14.92827	.8508405	-17.545	0.000	-16.59912	-13.25742
count44	-14.61235	.9779785	-14.941	0.000	-16.53287	-12.69183
count45	-16.78091	1.033181	-16.242	0.000	-18.80984	-14.75199
count46	-16.25461	1.126299	-14.432	0.000	-18.4664	-14.04283
count47	-14.47733	.9520391	-15.207	0.000	-16.34691	-12.60774
count48	-13.94879	.980024	-14.233	0.000	-15.87333	-12.02425
count49	-12.38266	.6572248	-18.841	0.000	-13.67329	-11.09202
count50	-12.96759	.628923	-20.619	0.000	-14.20265	-11.73254
count51	-13.04549	.5976832	-21.827	0.000	-14.2192	-11.87178
count52	-14.36155	1.179716	-12.174	0.000	-16.67824	-12.04487
count53	-14.54343	.8466405	-17.178	0.000	-16.20603	-12.88082
count54	(dropped)					
count55	-14.77259	.9536581	-15.490	0.000	-16.64536	-12.89983
count56	-15.30432	.9267809	-16.513	0.000	-17.1243	-13.48433
count57	-15.50705	.9778541	-15.858	0.000	-17.42733	-13.58677
count58	-16.25745	.9519495	-17.078	0.000	-18.12685	-14.38804
count59	-14.67329	.8884481	-16.516	0.000	-16.41799	-12.92858
count60	-13.3919	.8613118	-15.548	0.000	-15.08331	-11.70048
count61	-15.82534	1.264197	-12.518	0.000	-18.30793	-13.34275
count62	-14.74298	.8710808	-16.925	0.000	-16.45358	-13.03238
count63	-13.77265	.8320252	-16.553	0.000	-15.40655	-12.13875
count64	-13.63066	.9221653	-14.781	0.000	-15.44158	-11.81974
count65	(dropped)					

count66	(dropped)					
count67	-12.67065	.7995089	-15.848	0.000	-14.2407	-11.1006
count68	-15.72707	1.460939	-10.765	0.000	-18.59601	-12.85813
count69	-15.40587	1.184355	-13.008	0.000	-17.73167	-13.08008
count70	-14.99274	.9545808	-15.706	0.000	-16.86732	-13.11817
count71	-16.71053	1.331912	-12.546	0.000	-19.32609	-14.09496
count72	-14.76196	1.060351	-13.922	0.000	-16.84424	-12.67968
count73	-15.31369	1.145746	-13.366	0.000	-17.56367	-13.06372
count74	-15.06552	.996815	-15.114	0.000	-17.02303	-13.10801
count75	-12.69271	.724955	-17.508	0.000	-14.11636	-11.26907
count76	-15.25931	.8807005	-17.326	0.000	-16.9888	-13.52982
count77	-15.38832	1.096367	-14.036	0.000	-17.54133	-13.23531
count78	-11.98554	.6624898	-18.092	0.000	-13.28652	-10.68457
count79	-14.46489	.9212581	-15.701	0.000	-16.27403	-12.65575
count80	-14.29388	1.084101	-13.185	0.000	-16.42281	-12.16496
count81	-11.47294	.6826744	-16.806	0.000	-12.81355	-10.13233
count82	-18.76168	1.281794	-14.637	0.000	-21.27882	-16.24454
count83	(dropped)					
count84	-16.70395	1.576673	-10.594	0.000	-19.80016	-13.60773
count85	-14.49414	.9663499	-14.999	0.000	-16.39183	-12.59646
count86	-17.72166	1.53058	-11.578	0.000	-20.72736	-14.71596
count87	-16.76845	1.347845	-12.441	0.000	-19.4153	-14.1216
count88	-15.3189	1.198731	-12.779	0.000	-17.67293	-12.96488
count89	-14.83759	1.065387	-13.927	0.000	-16.92976	-12.74542
count90	-13.63322	.9296173	-14.665	0.000	-15.45877	-11.80767
count91	-15.86404	1.364045	-11.630	0.000	-18.5427	-13.18537
count92	-13.89152	.8595828	-16.161	0.000	-15.57954	-12.2035
count93	-15.127	1.194236	-12.667	0.000	-17.4722	-12.7818
count94	-12.82121	.8782592	-14.598	0.000	-14.5459	-11.09651
count95	-14.96321	1.08493	-13.792	0.000	-17.09376	-12.83266
count96	-16.32211	1.158108	-14.094	0.000	-18.59636	-14.04785
count97	-18.00769	1.064499	-16.917	0.000	-20.09812	-15.91726
count98	-12.72098	.7778549	-16.354	0.000	-14.24851	-11.19346
count99	-16.50663	1.265789	-13.041	0.000	-18.99234	-14.02091
count100	-16.2367	1.210004	-13.419	0.000	-18.61287	-13.86054
count101	-11.4871	.7042333	-16.311	0.000	-12.87005	-10.10415
count102	-14.04341	1.032902	-13.596	0.000	-16.07179	-12.01503
count103	-12.77883	.8755243	-14.596	0.000	-14.49816	-11.05951
count104	-16.27004	1.076389	-15.115	0.000	-18.38382	-14.15627
count105	-14.80007	1.014874	-14.583	0.000	-16.79305	-12.8071
count106	-14.58294	1.098113	-13.280	0.000	-16.73938	-12.4265
count107	-16.45603	1.203771	-13.670	0.000	-18.81995	-14.0921
count108	-12.53806	.8617116	-14.550	0.000	-14.23026	-10.84586
count109	-15.49515	1.004383	-15.428	0.000	-17.46752	-13.52277
count110	-14.29199	1.051585	-13.591	0.000	-16.35705	-12.22692
count111	-13.9019	1.08495	-12.813	0.000	-16.03249	-11.77131
count112	-13.45993	1.056326	-12.742	0.000	-15.53431	-11.38555
count113	-12.90285	.7362089	-17.526	0.000	-14.3486	-11.45711
count114	-13.02127	1.1062	-11.771	0.000	-15.19359	-10.84895
count115	-13.78133	1.006713	-13.689	0.000	-15.75828	-11.80438
count116	-13.96869	.9958439	-14.027	0.000	-15.9243	-12.01309
count117	-15.40879	1.284398	-11.997	0.000	-17.93105	-12.88653
count118	-13.64459	1.13151	-12.059	0.000	-15.86661	-11.42257
count119	-15.12236	1.304939	-11.589	0.000	-17.68495	-12.55976

```
count120 |  -14.61967   1.059354    -13.801   0.000      -16.69999   -12.53934
count121 |  -13.90147   1.067995    -13.016   0.000      -15.99877   -11.80418
count122 |  -11.81946   .6211424    -19.029   0.000      -13.03924   -10.59968
count123 |  -13.44955   .9390232    -14.323   0.000      -15.29357   -11.60552
count124 |  -15.83572   1.287992    -12.295   0.000      -18.36503    -13.3064
count125 |  -10.96668   .6934795    -15.814   0.000      -12.32851   -9.604845
count126 |  -12.51368   .6567841    -19.053   0.000      -13.80345   -11.22391
count127 |  -14.42024   1.119163    -12.885   0.000      -16.61801   -12.22246
count128 |  -14.02165   .9755969    -14.372   0.000      -15.93749    -12.1058
count129 |  -14.03316   1.208746    -11.610   0.000      -16.40685   -11.65946
count130 |  -14.96265   1.061308    -14.098   0.000      -17.04681   -12.87849
count131 |   -13.0315   1.131158    -11.520   0.000      -15.25283   -10.81017
count132 |  -15.58233   1.226472    -12.705   0.000      -17.99084   -13.17383
count133 |  -14.36686   1.067454    -13.459   0.000      -16.46309   -12.27063
count134 |  -14.76287   1.035636    -14.255   0.000      -16.79661   -12.72912
count135 |  -15.77389   1.211243    -13.023   0.000      -18.15249   -13.39529
count136 |  -15.11049   1.297341    -11.647   0.000      -17.65817   -12.56282
count137 |  -15.41208   1.457579    -10.574   0.000      -18.27442   -12.54973
count138 |  -14.77297   1.153494    -12.807   0.000      -17.03816   -12.50778
count139 |  -14.23735   1.116098    -12.756   0.000       -16.4291   -12.04559
count140 |  -13.68746   .7114819    -19.238   0.000      -15.08464   -12.29027
count141 |  -13.97492   .9363565    -14.925   0.000      -15.81371   -12.13614
count142 |   -15.0887   .8881869    -16.988   0.000      -16.83289   -13.34451
count143 |  -13.27476   .6351815    -20.899   0.000      -14.52211   -12.02741
count144 |  (dropped)
count145 |  -12.91402   .5878891    -21.967   0.000      -14.06849   -11.75954
------------------------------------------------------------------------------
```

```
169. predict pla5emis;
(237 missing values generated)

170. predict se_emis, stdf;
(237 missing values generated)

171. generate u = pla5emis-la5emis;
(259 missing values generated)

172. list coun year pla5emis la5emis u se_emis if counindx==88;

                coun       year   pla5emis    la5emis          u    se_emis
  >
 665.          CHINA       1957          .   3.968974          .          .
  >
 666.          CHINA       1992   6.328689   6.518021  -.1893325   .3045313
  >
 667.          CHINA       1962          .    5.11556          .          .
  >
 668.          CHINA       1987     6.0784   6.274206   -.195806   .3023726
  >
 669.          CHINA       1967   5.030378   4.844869   .1855097   .3025277
  >
 670.          CHINA       1977   5.749897   5.733543   .0163536   .3012219
  >
 671.          CHINA       1982   5.879333    6.02307  -.1437378     .30173
```

```
 >
672.              CHINA       1972    5.431779    5.294098    .1376805    .3016496
 >
```

173. list coun year pla5emis la5emis u se_emis if counindx==90;

```
                    coun       year    pla5emis     la5emis           u     se_emis
 >
681.               INDIA       1992    4.746612    5.236049   -.4894376    .2991731
 >
682.               INDIA       1972    3.968381     3.99889   -.0305097    .2940935
 >
683.               INDIA       1962    3.735413    3.510835    .2245784    .2952161
 >
684.               INDIA       1977    4.153408    4.255882   -.1024747    .2941944
 >
685.               INDIA       1957    3.558008    3.157894    .4001145    .2961026
 >
686.               INDIA       1987    4.518148    4.901045   -.3828974    .2967519
 >
687.               INDIA       1982    4.357553    4.575284    -.217731    .2951965
 >
688.               INDIA       1967    3.911387    3.802467    .1089203    .2943832
 >
```

174. list coun year pla5emis la5emis u se_emis if counindx==64;

```
                    coun       year    pla5emis     la5emis           u     se_emis
 >
481.              MEXICO       1992     4.30014    4.441646   -.1415057     .297823
 >
482.              MEXICO       1957    2.443902     2.41135    .032552    .2957042
 >
483.              MEXICO       1972    3.492401    3.374826    .1175749    .2939634
 >
484.              MEXICO       1982    4.041032    4.248595   -.2075629    .2947703
 >
485.              MEXICO       1987    4.298829    4.338542   -.0397139     .296547
 >
486.              MEXICO       1967    3.085772    3.050069    .0357029    .2941885
 >
487.              MEXICO       1962    2.817902    2.810968    .0069344    .2948527
 >
488.              MEXICO       1977    3.802835    3.748322    .0545123    .2941801
 >
```

175. gen err = (pla5emis - la5emis);
(259 missing values generated)

176. gen p5emis = exp(pla5emis);
(237 missing values generated)

177. gen a5emis = exp(la5emis);
(62 missing values generated)

```
178. gen err2 = (p5emis - a5emis)/a5emis;
(259 missing values generated)

179. gen sqerr = (pla5emis - la5emis)*(pla5emis - la5emis);
(259 missing values generated)

180. gen sumsqerr = sum(sqerr);

181. list sumsqerr if time==43;

      sumsqerr
   3.  .0166888
  11.  .4183177
  19.  1.280912
  28.  1.477393
  35.  1.636026
  43.  2.052775
  49.  2.489761
  58.  4.489461
  65.  5.117545
  73.  5.611511
  83.  5.997539
  89.  6.043362
 100.  6.692412
 105.  6.704052
 113.  6.814319
 121.    7.5663
 130.  9.010836
 138.  9.095232
 146.   9.25806
 154.  9.395492
 163.  9.459763
 169.  10.28596
 177.  11.06823
 185.  12.32285
 195.  12.74658
 201.  13.04903
 211.  14.70311
 217.  15.39201
 225.  15.76945
 234.  16.77653
 243.  17.73935
 249.  19.30666
 258.  21.97918
 267.  22.13655
 275.  22.59517
 283.   23.0062
 289.  24.71376
 298.  25.62152
 305.  26.07694
 314.  26.38809
 323.  27.19565
 334.  27.82045
```

339. 27.85115
345. 27.96685
353. 28.06392
361. 30.30801
370. 31.90242
377. 32.36356
387. 32.58417
394. 32.6086
404. 32.75224
409. 32.83315
417. 32.93261
427. 33.07186
433. 33.09502
441. 33.48637
449. 33.66798
459. 33.86932
465. 34.1781
474. 34.40184
481. 34.72837
489. 34.81992
497. 35.55019
506. 36.61001
515. 37.10666
526. 37.10666
529. 37.16031
537. 37.60547
545. 37.62172
553. 37.65827
561. 37.96543
569. 38.02234
577. 38.15906
585. 38.34011
593. 39.18367
601. 39.3587
609. 39.738
617. 39.87773
625. 40.18154
633. 40.69021
644. 41.9226
649. 42.64537
660. 44.96758
666. 45.00342
673. 45.16581
681. 45.43796
691. 45.87998
698. 46.15762
705. 46.40136
714. 46.68792
721. 47.09981
729. 47.24797
737. 47.69164
750. 48.23017
753. 48.26859
761. 48.62174

```
 771.  48.88041
 777.  49.13044
 785.  49.23989
 793.   49.3991
 804.  49.71714
 811.  49.79026
 818.  50.28338
 825.  51.70176
 834.  52.02742
 841.  52.10855
 849.  52.55895
 859.  53.75169
 867.  53.76907
 873.  53.82088
 881.  54.07801
 894.  54.62268
 897.  54.63087
 905.  54.75364
 913.  54.86872
 921.  54.90885
 929.  55.56107
 940.  55.70783
 945.  55.71294
 953.  56.10788
 965.  56.80999
 969.  57.59375
 977.  59.06006
 985.  59.18655
 993.   60.1968
1002.  61.24746
1009.  61.53067
1017.  61.69007
1026.   61.8346
1033.  61.98851
1041.  62.39085
1049.  62.55068
1057.  62.90134
1065.  63.08854
1073.  63.19817
1081.  63.51772
1091.  63.59359
1097.  63.59793
1105.  63.62154
1113.  63.84657
1121.  64.18591
1131.  64.34798
1142.  65.18987
1149.  65.18987
1157.  65.20689
```

```
182. graph err2 if time==43, histogram bin(8) normal freq xlab(-2.0,-1.0,0,1.0,2.0
  > );
```

end of do-file

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