Econometric Analyses

Global Climate Change

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Major Non-Annex I Countries

Brazil
China
India
Korea
Mexico
Singapore

11/6 Treas mtg on ACC formula

Pop density

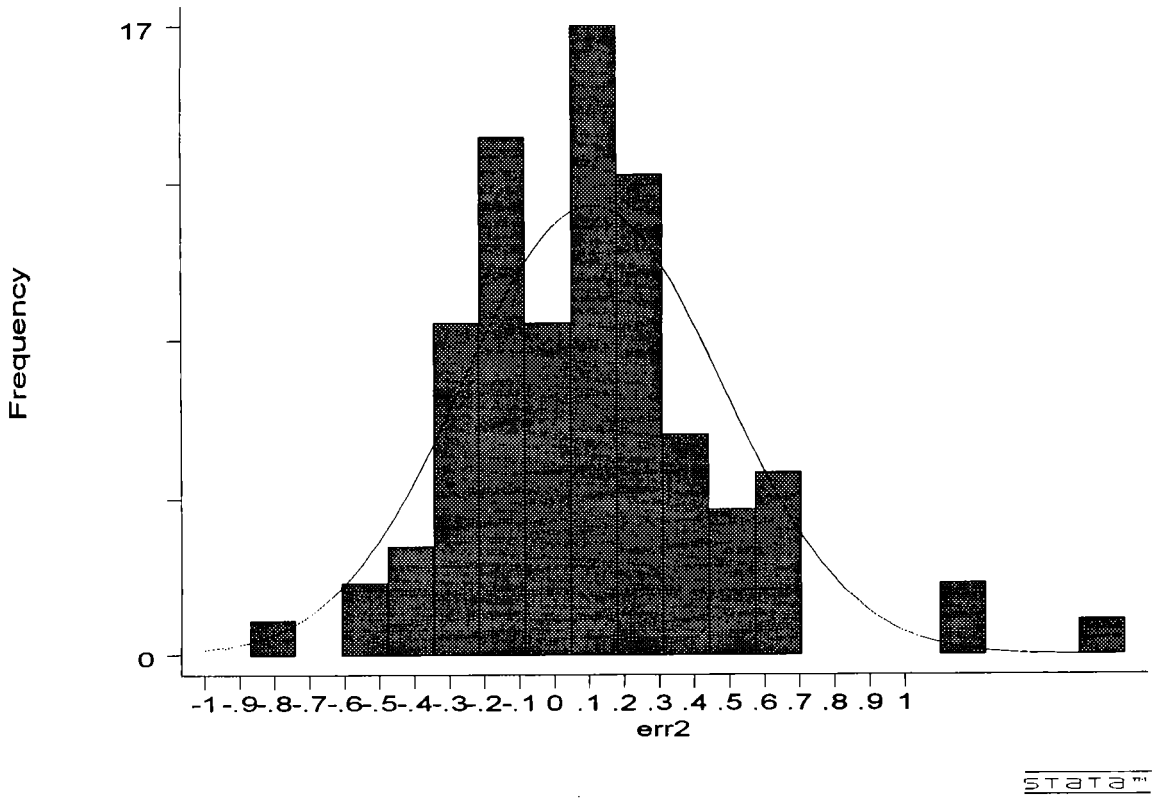
formula - what is constant term for U.S. to be @
1990 & 2010
→ where do Annex I countries fall
w/ this constant
what is constant term to get aggregate Annex I
back to 1990
→ what does that mean for US constraint

	formula effects on constant: US 1990 & 2010	constant A 1 1990 & 2010
US		
A 1		
key developing countries		

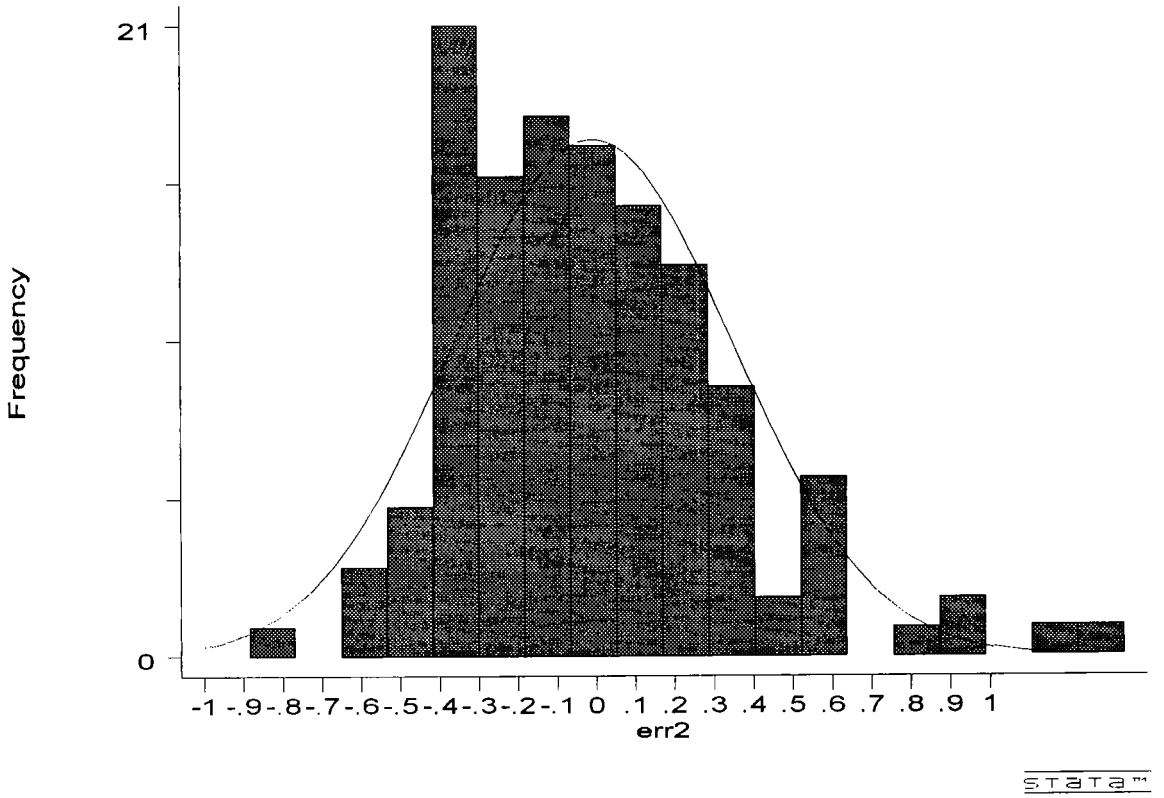
constant

when does China hit 1:1 C ton/person

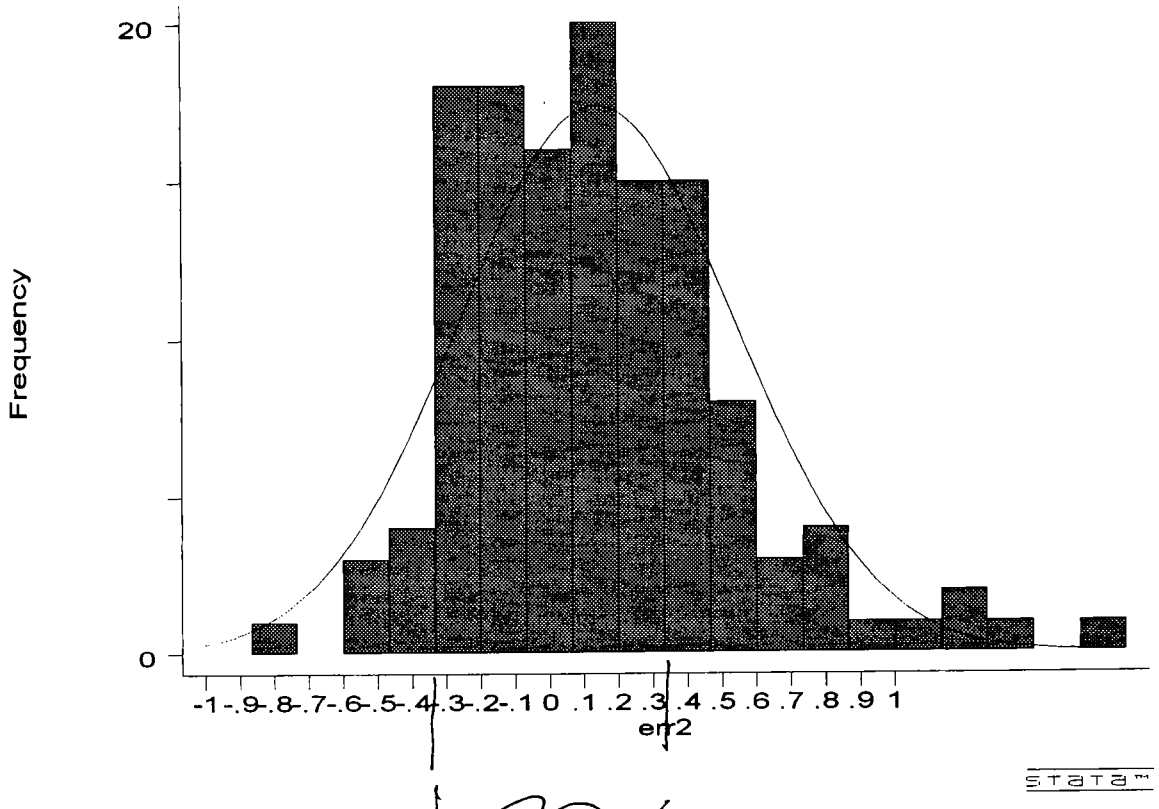
Model 16



model 15



Model 4

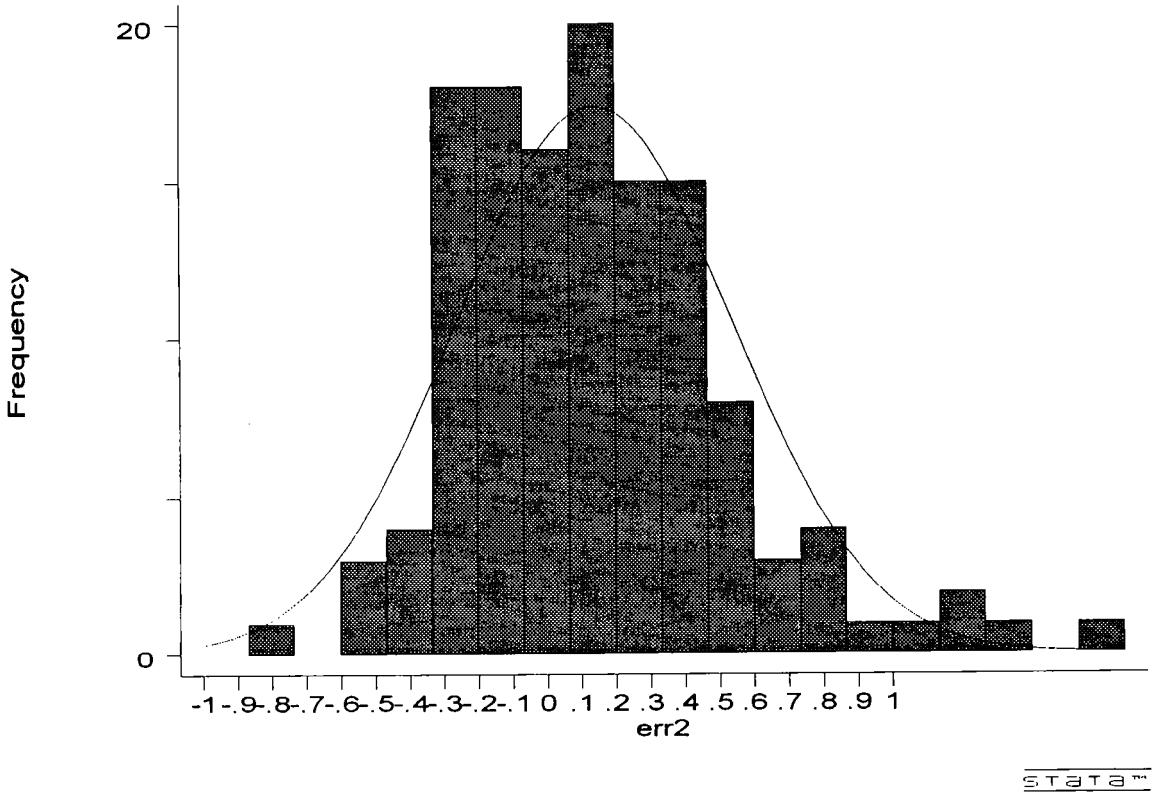


≥ 75%

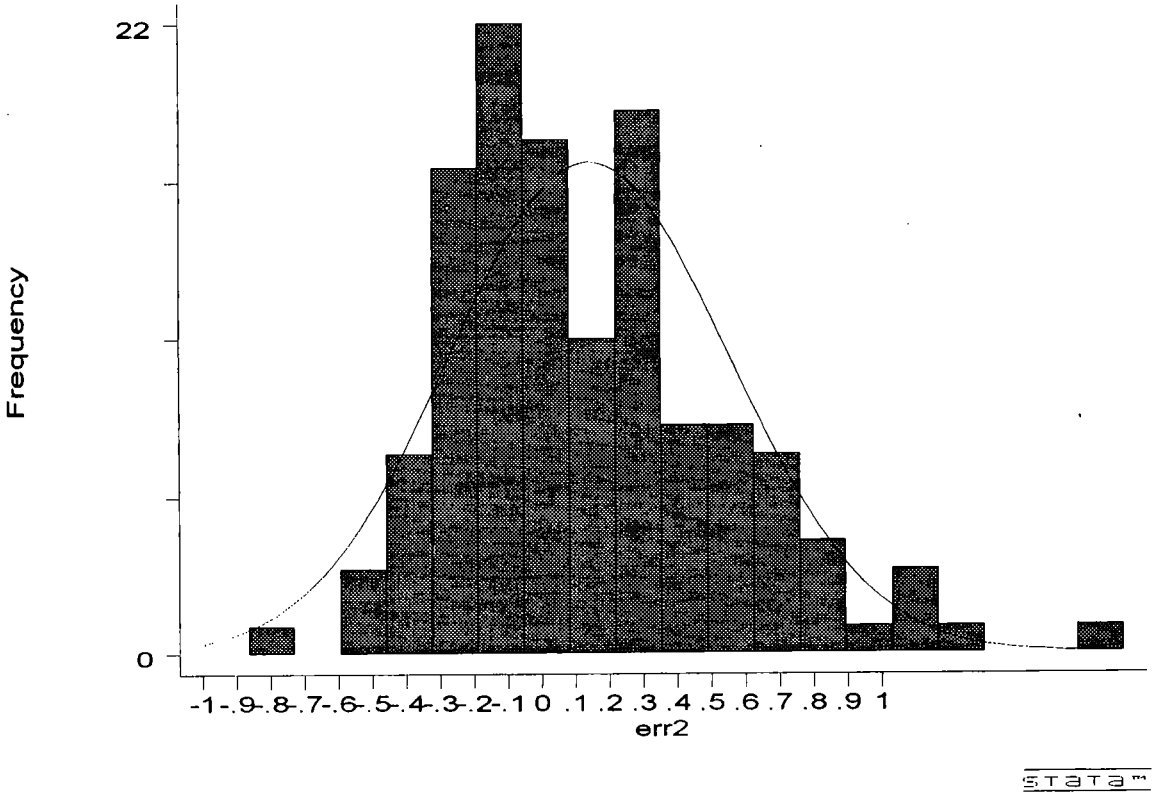
-2 2

56

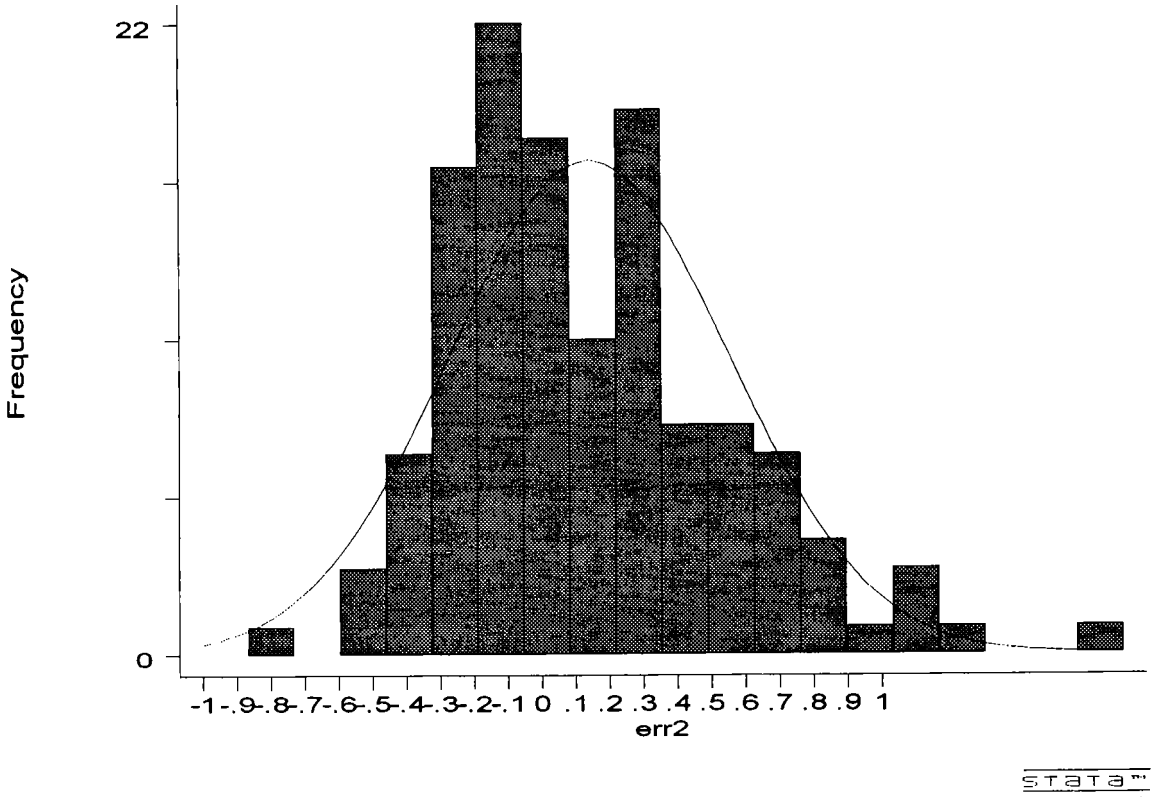
Model 13



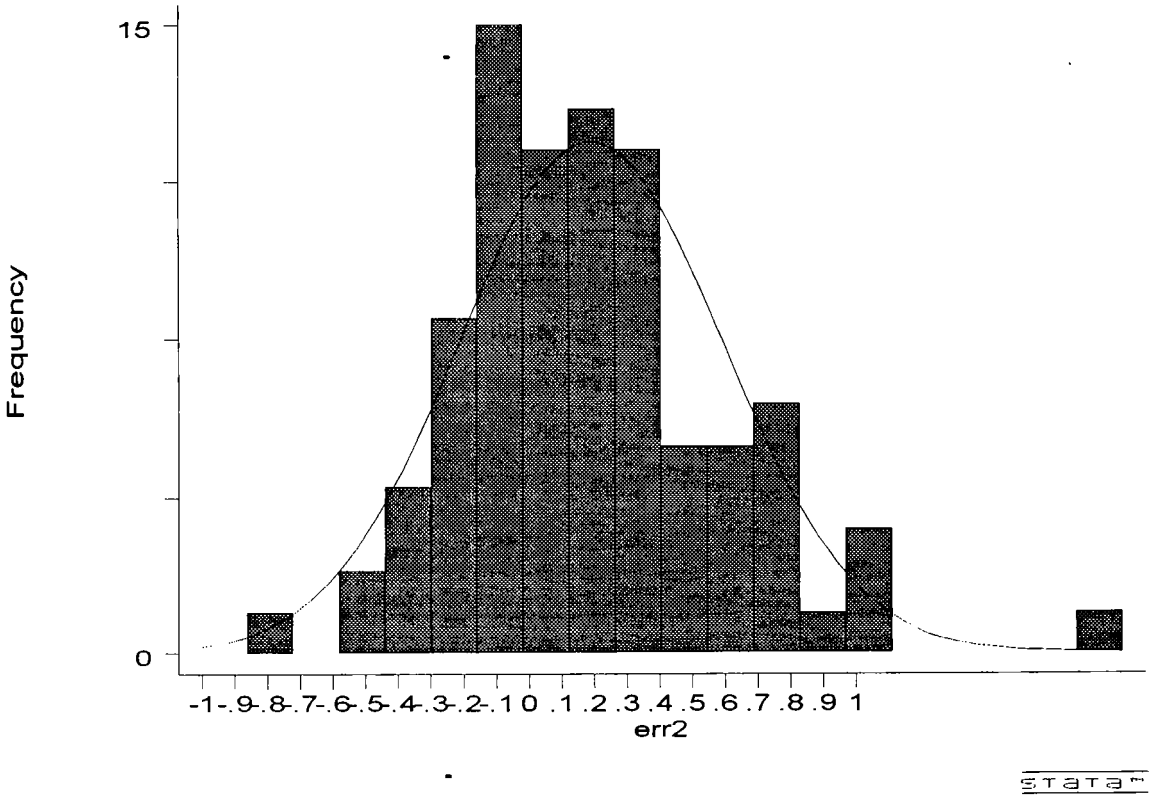
Model 12



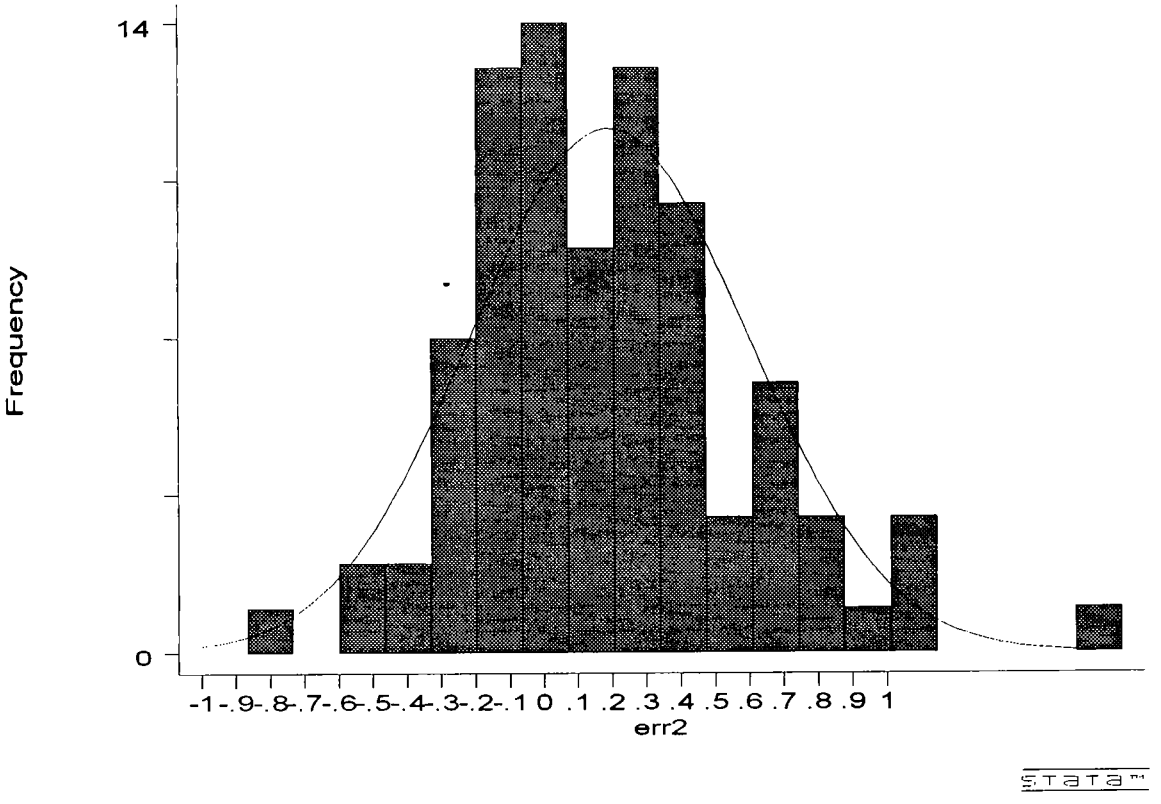
Model 10



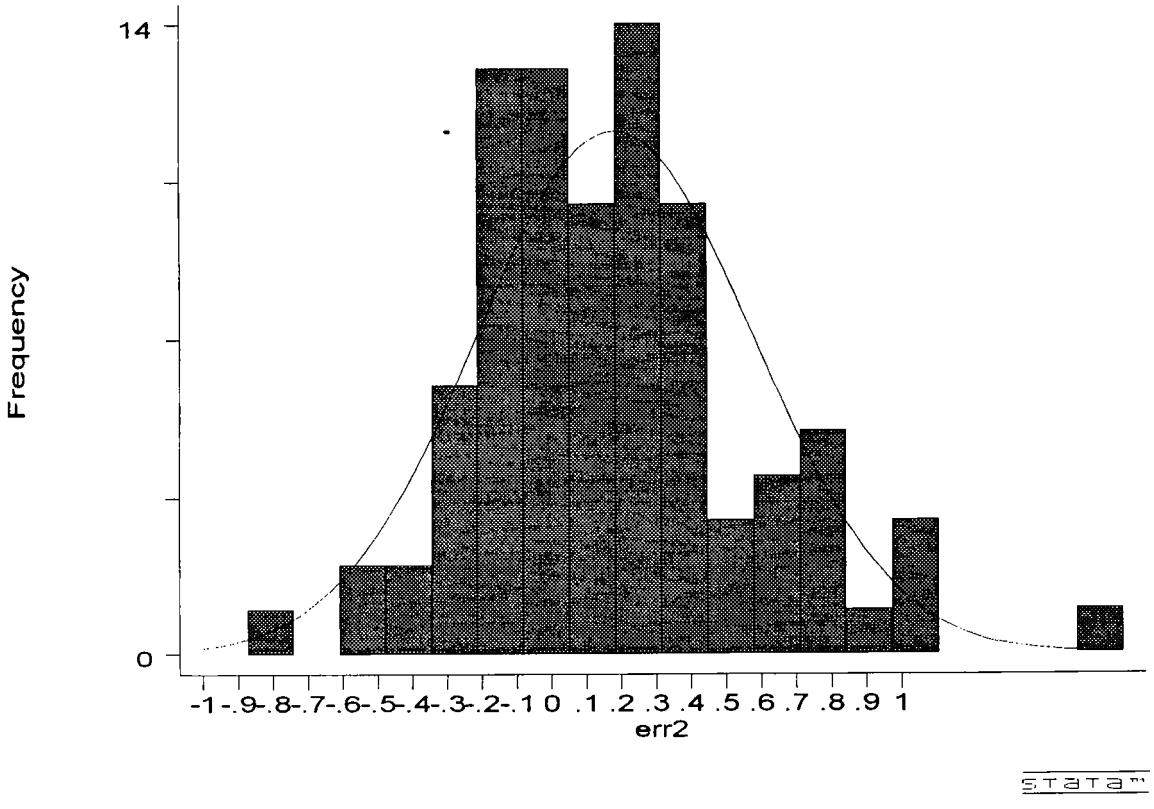
Model 9



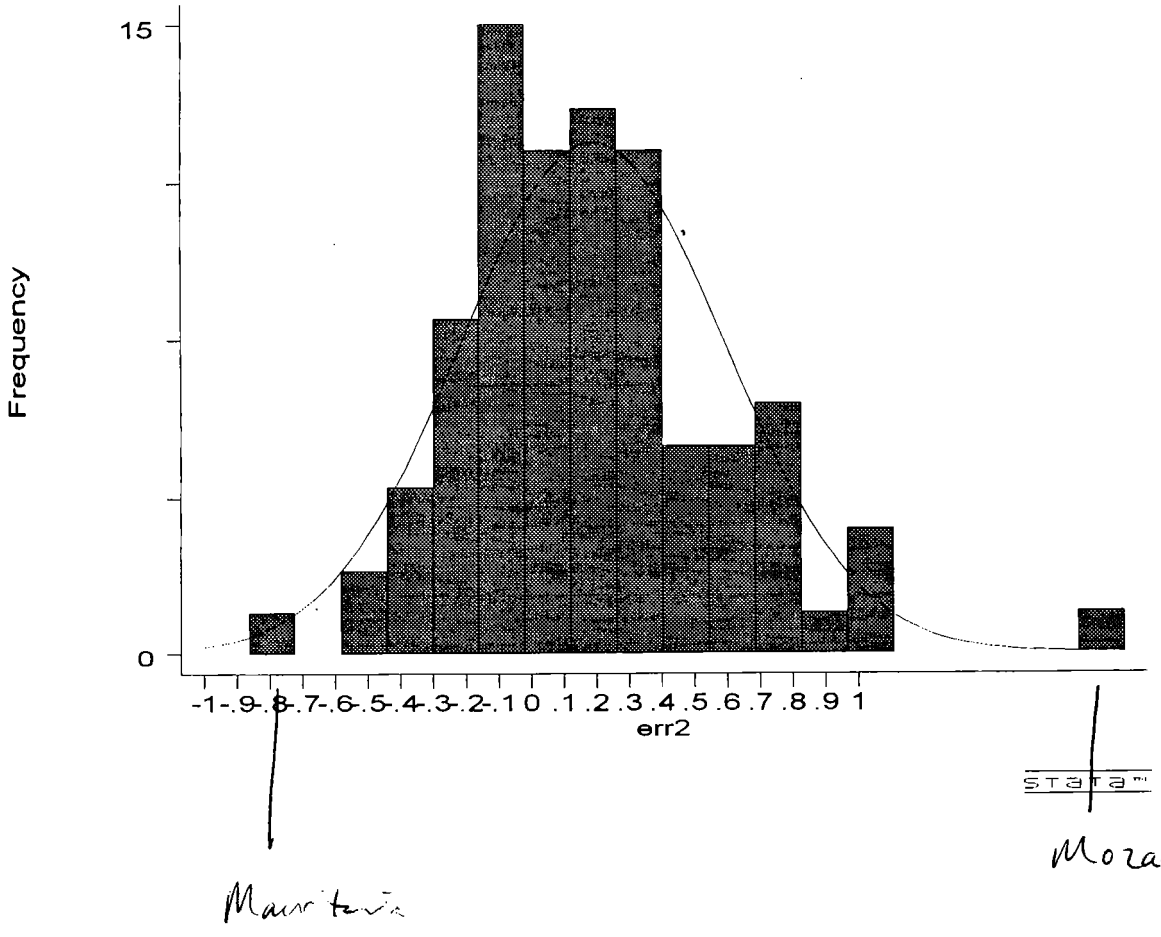
Model 8



Model 7



Model 6


15
0
Frequency
-1 -.9 -.8 -.7 -.6 -.5 -.4 -.3 -.2 -.1 0 .1 .2 .3 .4 .5 .6 .7 .8 .9 1
err2
Mauritania
Mozambique

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. **replace devduma = 0 if dev2>=4500;**
(2451 real changes made)

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

96. **gen devduma1 = dev2 >= 0;**

97. **replace devduma1 = 0 if dev2>=717;**
(5933 real changes made)

98. **gen devduma2 = dev2 >= 717;**

99. **replace devduma2 = 0 if dev2>=972;**
(5331 real changes made)

100. **gen devduma3 = dev2 >= 972;**

101. **replace devduma3 = 0 if dev2>=1313;**
(4729 real changes made)

102. **gen devduma4 = dev2 >= 1313;**

103. **replace devduma4 = 0 if dev2>=1931;**
(4127 real changes made)

104. **gen devduma5 = dev2 >=1931;**

105. **replace devduma5 = 0 if dev2>=2875;**
(3526 real changes made)

106. **gen devduma6 = dev2 >= 2875;**

107. **replace devduma6 = 0 if dev2>=3799;**
(2881 real changes made)

108. **gen devduma7 = dev2 >= 3799;**

109. **replace devduma7 = 0 if dev2>=5091;**
(2322 real changes made)

110. **gen devduma8 = dev2 >= 5091;**

111. **replace devduma8 = 0 if dev2>=7638;**
(1677 real changes made)

112. **gen devduma9 = dev2 >= 7638;**

113. **replace devduma9 = 0 if dev2>=11566;**
(1075 real changes made)

114. **gen devdumb1 = devduma1*lgdpl5;**
(1501 missing values generated)

115. **gen devdumb2 = devduma2*lgdpl5;**
(1501 missing values generated)

116. **gen devdumb3 = devduma3*lgdpl5;**
(1501 missing values generated)

117. **gen devdumb4 = devduma4*lgdpl5;**
(1501 missing values generated)

118. **gen devdumb5 = devduma5*lgdpl5;**
(1501 missing values generated)

119. **gen devdumb6 = devduma6*lgdpl5;**
(1501 missing values generated)

120. **gen devdumb7 = devduma7*lgdpl5;**
(1501 missing values generated)

121. **gen devdumb8 = devduma8*lgdpl5;**
(1501 missing values generated)

122. **gen devdumb9 = devduma9*lgdpl5;**
(1501 missing values generated)

123. **gen devdumc1 = dev2 >= 717;**

124. **replace devdumc1 = 0 if dev2>=972;**
(5331 real changes made)

125. **gen devdumc2= dev2 >= 972;**

126. **replace devdumc2 = 0 if dev2>=1313;**
(4729 real changes made)

127. **gen devdumc3 = dev2 >= 1313;**

128. **replace devdumc3 = 0 if dev2>=1931;**

(4127 real changes made)

129. **gen devdumc4 = dev2 >=1931;**

130. **replace devdumc4 = 0 if dev2>=2875;**
(3526 real changes made)

131. **gen devdumc5 = dev2 >= 2875;**

132. **replace devdumc5 = 0 if dev2>=3799;**
(2881 real changes made)

133. **gen devdumc6 = dev2 >= 3799;**

134. **replace devdumc6 = 0 if dev2>=5091;**
(2322 real changes made)

135. **gen devdumc7 = dev2 >= 5091;**

136. **replace devdumc7 = 0 if dev2>=7638;**
(1677 real changes made)

137. **gen devdumc8 = dev2 >= 7638;**

138. **replace devdumc8 = 0 if dev2>=11566;**
(1075 real changes made)

139. **gen devdumc9 = dev2 >= 11566;**

140. **gen devdumd1 = devdumc1*lgdp15;**
(1501 missing values generated)

141. **gen devdumd2 = devdumc2*lgdp15;**
(1501 missing values generated)

142. **gen devdumd3 = devdumc3*lgdp15;**
(1501 missing values generated)

143. **gen devdumd4 = devdumc4*lgdp15;**
(1501 missing values generated)

144. **gen devdumd5 = devdumc5*lgdp15;**
(1501 missing values generated)

145. **gen devdumd6 = devdumc6*lgdp15;**
(1501 missing values generated)

146. **gen devdumd7 = devdumc7*lgdp15;**
(1501 missing values generated)

147. **gen devdumd8 = devdumc8*lgdp15;**
(1501 missing values generated)

148. **gen devdumd9 = devdumc9*lgdp15;**

(1501 missing values generated)

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

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

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

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

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

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

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

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

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

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

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

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

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

162. **gen eurodum2 = eurodum*lgdp15;**
(1501 missing values generated)

163. **gen ausdum = counindx<=152;**

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

165. **gen ausdum2 = ausdum*lgdp15;**
(1501 missing values generated)

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

167. **generate inv15 = invest[_n-5]/100;**
(1499 missing values generated)

168. **generate la5emis = ln((totalcd + totalcd[_n-1] + totalcd[_n-2] + totalcd[_n-3**

```
> ] +
> totalcd[_n-4])/5000);
(544 missing values generated)

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

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

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

172. generate timesq = time*time;

173. gen trend = time;

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

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

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

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

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

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

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

181. drop if counindx==151;
(43 observations deleted)

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

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

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

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

186. drop if time==37;
```

(145 observations deleted)

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

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

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

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

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

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

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

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

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

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

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

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

199. **drop if time==21;**
(145 observations deleted)

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

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

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

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

204. **drop if time==15;**

(145 observations deleted)

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

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

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

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

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

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

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

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

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

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

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

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

217. **set matsize 300;**

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

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

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

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

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

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

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

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

226. generate time2sq = time2*time2;

227. 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
```

```
228. xtreg la5emis lgdpl5 lgdpl6 lpopl5 invl5 devdumd1 devdumd2 devdumd3 devdumd4
  > devdumd5
  > devdumd6 devdumd7 devdumd8 devdumd9 if time<=42, fe i(counindx);
```

```
                                                Fixed-effects (within) regression
sd(u_counindx)                 =  2.283518      Number of obs =       770
sd(e_counindx_t)               =  .2685496                 n =       140
sd(e_counindx_t + u_counindx)= 2.299255                T-bar =       5.5

corr(u_counindx, Xb)           =   -0.5436      R-sq within   =    0.8080
                                                      between  =    0.4430
                                                      overall  =    0.4468

                                                F( 13,   617) =    199.71
                                                     Prob > F =    0.0000
```

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	.7525777	.2166051	3.474	0.001	.327205	1.17795
lgdpl6	-.1898134	.1957103	-0.970	0.332	-.5741524	.1945256
lpopl5	.712361	.1192193	5.975	0.000	.4782363	.9464858
invl5	1.315251	.2446508	5.376	0.000	.8348015	1.7957
devdumd1	.3365927	.1493433	2.254	0.025	.04331	.6298755
devdumd2	.4612839	.1509164	3.057	0.002	.1649119	.7576559
devdumd3	.3255282	.1302981	2.498	0.013	.0696466	.5814098
devdumd4	.439058	.1239345	3.543	0.000	.1956735	.6824425
devdumd5	.2167218	.1240393	1.747	0.081	-.0268686	.4603122
devdumd6	.2110006	.1313613	1.606	0.109	-.0469688	.4689701
devdumd7	.1852048	.1292913	1.432	0.153	-.0686995	.4391091
devdumd8	.1126761	.1319528	0.854	0.393	-.1464548	.3718071
devdumd9	-.0391378	.1341588	-0.292	0.771	-.3026011	.2243255
_cons	-13.1835	.6298169	-20.932	0.000	-14.42034	-11.94665
counindx	F(139,617) =	27.273	0.000	(140 categories)		

```
229. regress la5emis lgdpl5 lgdpl6 lpopl5 invl5 devdumd1 devdumd2 devdumd3 devdumd
  > 4 devdumd5
  > devdumd6 devdumd7 devdumd8 devdumd9 count* if time<=42, noconstant;
```

Source	SS	df	MS		
Model	5197.53584	153	33.9708225	Number of obs =	770
Residual	44.4973381	617	.072118862	F(153, 617) =	471.04
Total	5242.03317	770	6.80783529	Prob > F =	0.0000
				R-squared =	0.9915
				Adj R-squared =	0.9894
				Root MSE =	.26855

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	.7525776	.2166052	3.474	0.001	.3272049	1.17795
lgdpl6	-.1898131	.1957103	-0.970	0.332	-.5741521	.1945259

lpopl5	.7123609	.1192193	5.975	0.000	.4782362	.9464857
invl5	1.315251	.2446508	5.376	0.000	.8348014	1.7957
devdumd1	.3365926	.1493433	2.254	0.025	.0433099	.6298754
devdumd2	.4612838	.1509164	3.057	0.002	.1649118	.7576558
devdumd3	.3255281	.1302981	2.498	0.013	.0696465	.5814097
devdumd4	.4390579	.1239345	3.543	0.000	.1956734	.6824424
devdumd5	.2167217	.1240393	1.747	0.081	-.0268687	.4603121
devdumd6	.2110005	.1313613	1.606	0.109	-.046969	.46897
devdumd7	.1852046	.1292913	1.432	0.153	-.0686997	.4391089
devdumd8	.1126759	.1319528	0.854	0.393	-.146455	.3718069
devdumd9	-.039138	.1341588	-0.292	0.771	-.3026013	.2243253
count1	-15.40031	.8481971	-18.157	0.000	-17.06601	-13.73461
count2	-11.23638	1.032939	-10.878	0.000	-13.26488	-9.207877
count3	-16.43419	.9573151	-17.167	0.000	-18.31418	-14.5542
count4	-13.7836	.6102834	-22.586	0.000	-14.98208	-12.58511
count5	-13.49811	.9810285	-13.759	0.000	-15.42467	-11.57155
count6	-13.90912	.926533	-15.012	0.000	-15.72866	-12.08958
count7	-16.33391	1.052871	-15.514	0.000	-18.40156	-14.26627
count8	-13.01742	.6172787	-21.088	0.000	-14.22965	-11.8052
count9	-12.88585	.8829399	-14.594	0.000	-14.61978	-11.15192
count10	-13.40414	.9512932	-14.090	0.000	-15.2723	-11.53597
count11	-11.9892	.6500663	-18.443	0.000	-13.26582	-10.71259
count12	-14.6265	.6396607	-22.866	0.000	-15.88268	-13.37033
count13	-12.12764	.5599853	-21.657	0.000	-13.22734	-11.02793
count14	-14.65452	.9909879	-14.788	0.000	-16.60064	-12.7084
count15	-13.78185	1.131658	-12.178	0.000	-16.00422	-11.55948
count16	-11.21885	.7112657	-15.773	0.000	-12.61565	-9.822057
count17	-14.41725	.7353274	-19.607	0.000	-15.8613	-12.9732
count18	-16.18964	1.075524	-15.053	0.000	-18.30177	-14.0775
count19	-14.59762	.9240073	-15.798	0.000	-16.4122	-12.78304
count20	-11.89943	.7427626	-16.021	0.000	-13.35808	-10.44078
count21	-14.72516	.8469133	-17.387	0.000	-16.38834	-13.06198
count22	-15.00517	1.037011	-14.470	0.000	-17.04167	-12.96867
count23	-13.1727	.8309884	-15.852	0.000	-14.80461	-11.54079
count24	-16.82253	1.065836	-15.783	0.000	-18.91564	-14.72942
count25	-12.57206	.9756351	-12.886	0.000	-14.48803	-10.65609
count26	-13.18507	.9792074	-13.465	0.000	-15.10805	-11.26208
count27	-13.76321	.8146251	-16.895	0.000	-15.36298	-12.16344
count28	-13.06942	.72998	-17.904	0.000	-14.50297	-11.63587
count29	-16.01498	.8401849	-19.061	0.000	-17.66495	-14.36501
count30	-15.5075	1.061201	-14.613	0.000	-17.5915	-13.4235
count31	-15.71115	.9357139	-16.791	0.000	-17.54872	-13.87358
count32	-15.78955	1.038215	-15.208	0.000	-17.82842	-13.75069
count33	-13.6901	.5531975	-24.747	0.000	-14.77648	-12.60372
count34	-16.39405	.9162274	-17.893	0.000	-18.19335	-14.59475
count35	-15.62195	1.019701	-15.320	0.000	-17.62446	-13.61945
count36	-11.12126	.3853707	-28.859	0.000	-11.87806	-10.36447
count37	-15.86036	.9568243	-16.576	0.000	-17.73939	-13.98133
count38	-15.85066	.9505007	-16.676	0.000	-17.71727	-13.98405
count39	-12.14808	.9065754	-13.400	0.000	-13.92842	-10.36773
count40	-15.79199	1.11093	-14.215	0.000	-17.97365	-13.61033
count41	-12.29828	.5753159	-21.377	0.000	-13.4281	-11.16847
count42	-12.42534	1.06357	-11.683	0.000	-14.514	-10.33668
count43	-14.37386	.842316	-17.065	0.000	-16.02801	-12.7197

count44	-15.03431	.7606356	-19.765	0.000	-16.52806	-13.54056
count45	-13.16138	1.04942	-12.542	0.000	-15.22225	-11.10052
count46	-12.45104	1.128783	-11.031	0.000	-14.66777	-10.23432
count47	-14.03885	.9761787	-14.381	0.000	-15.95589	-12.12181
count48	-14.53314	1.053069	-13.801	0.000	-16.60117	-12.4651
count49	-10.02304	.7043541	-14.230	0.000	-11.40626	-8.639815
count50	-11.30419	.6078731	-18.596	0.000	-12.49794	-10.11044
count51	-11.5432	.6201337	-18.614	0.000	-12.76103	-10.32537
count52	-9.343311	1.152195	-8.109	0.000	-11.60601	-7.080612
count53	-13.02427	.6747497	-19.302	0.000	-14.34936	-11.69919
count54	(dropped)					
count55	-15.11062	.7332237	-20.608	0.000	-16.55053	-13.6707
count56	-15.55458	.712223	-21.839	0.000	-16.95325	-14.1559
count57	-15.82522	.7470202	-21.184	0.000	-17.29223	-14.35821
count58	-16.60982	1.006612	-16.501	0.000	-18.58662	-14.63302
count59	-14.03916	.753754	-18.626	0.000	-15.5194	-12.55893
count60	-13.81198	.6714874	-20.569	0.000	-15.13066	-12.4933
count61	-13.44983	1.138247	-11.816	0.000	-15.68513	-11.21452
count62	-14.06302	.7452587	-18.870	0.000	-15.52658	-12.59947
count63	-12.3476	.6653816	-18.557	0.000	-13.65429	-11.04091
count64	-11.7678	.8527333	-13.800	0.000	-13.44242	-10.09319
count65	(dropped)					
count66	(dropped)					
count67	-10.18188	.7984564	-12.752	0.000	-11.7499	-8.613854
count68	-9.703069	1.406803	-6.897	0.000	-12.46577	-6.940367
count69	-13.09858	1.068089	-12.264	0.000	-15.19611	-11.00105
count70	-15.40805	.733366	-21.010	0.000	-16.84825	-13.96786
count71	-14.66883	1.22352	-11.989	0.000	-17.0716	-12.26606
count72	-12.97318	.9861791	-13.155	0.000	-14.90985	-11.0365
count73	-13.51091	.8973699	-15.056	0.000	-15.27317	-11.74864
count74	-13.50719	.7886545	-17.127	0.000	-15.05596	-11.95842
count75	-12.20547	.6243437	-19.549	0.000	-13.43157	-10.97938
count76	-15.49784	.6799614	-22.792	0.000	-16.83316	-14.16252
count77	-13.66888	.8588995	-15.914	0.000	-15.3556	-11.98216
count78	-10.66707	.5472639	-19.492	0.000	-11.74179	-9.592341
count79	-12.5004	.8428499	-14.831	0.000	-14.1556	-10.8452
count80	-12.1464	.9851927	-12.329	0.000	-14.08114	-10.21166
count81	-8.050359	.7421253	-10.848	0.000	-9.507756	-6.592961
count82	-19.48686	1.336811	-14.577	0.000	-22.11211	-16.86161
count83	(dropped)					
count84	-17.8767	1.602741	-11.154	0.000	-21.02419	-14.72921
count85	-11.80855	.9683704	-12.194	0.000	-13.71025	-9.906844
count86	-17.0868	1.475297	-11.582	0.000	-19.98401	-14.18958
count87	-17.67563	1.392186	-12.696	0.000	-20.40963	-14.94163
count88	-13.35674	.9391778	-14.222	0.000	-15.20111	-11.51237
count89	-12.64431	.9726386	-13.000	0.000	-14.5544	-10.73423
count90	-11.11245	.9286083	-11.967	0.000	-12.93607	-9.288837
count91	-12.55223	1.321104	-9.501	0.000	-15.14663	-9.957824
count92	-12.35182	.6932467	-17.817	0.000	-13.71323	-10.99041
count93	-13.3313	.9424329	-14.146	0.000	-15.18206	-11.48053
count94	-8.714134	.9243987	-9.427	0.000	-10.52948	-6.898785
count95	-13.26742	1.035494	-12.813	0.000	-15.30094	-11.2339
count96	-12.603	1.143823	-11.018	0.000	-14.84926	-10.35674
count97	-17.3182	1.053127	-16.445	0.000	-19.38635	-15.25005

count98	-10.92388	.7482348	-14.600	0.000	-12.39328	-9.454488
count99	-17.2175	1.29559	-13.289	0.000	-19.7618	-14.6732
count100	-15.54414	1.00667	-15.441	0.000	-17.52106	-13.56723
count101	-7.862902	.7761703	-10.130	0.000	-9.387158	-6.338647
count102	-9.301793	1.031676	-9.016	0.000	-11.32782	-7.27577
count103	-11.07846	.8218404	-13.480	0.000	-12.6924	-9.464517
count104	-15.50168	.90233	-17.180	0.000	-17.27369	-13.72967
count105	-13.03086	.9635377	-13.524	0.000	-14.92307	-11.13865
count106	-12.80308	1.020601	-12.545	0.000	-14.80735	-10.7988
count107	-16.97764	.9132616	-18.590	0.000	-18.77112	-15.18416
count108	-8.45394	.9165883	-9.223	0.000	-10.25395	-6.653929
count109	-14.87973	.8691088	-17.121	0.000	-16.5865	-13.17296
count110	-11.45326	1.031773	-11.101	0.000	-13.47947	-9.427044
count111	-10.9639	1.062124	-10.323	0.000	-13.04971	-8.878079
count112	-12.06195	1.024996	-11.768	0.000	-14.07485	-10.04905
count113	-11.42567	.6904013	-16.549	0.000	-12.78149	-10.06984
count114	-11.39579	.8765134	-13.001	0.000	-13.1171	-9.674477
count115	-10.98573	.9910264	-11.085	0.000	-12.93192	-9.039531
count116	-11.36463	.983258	-11.558	0.000	-13.29557	-9.433697
count117	-10.15389	1.244744	-8.157	0.000	-12.59834	-7.709442
count118	-10.80527	1.133517	-9.533	0.000	-13.03129	-8.579249
count119	-9.830648	1.263385	-7.781	0.000	-12.3117	-7.349591
count120	-12.61444	.9637894	-13.088	0.000	-14.50715	-10.72174
count121	-12.21054	1.019551	-11.976	0.000	-14.21275	-10.20833
count122	-8.814297	.6455169	-13.655	0.000	-10.08197	-7.54662
count123	-11.57205	.8603848	-13.450	0.000	-13.26168	-9.882409
count124	-12.6049	1.249789	-10.086	0.000	-15.05926	-10.15055
count125	-7.671496	.7160921	-10.713	0.000	-9.077769	-6.265222
count126	-11.26856	.6398606	-17.611	0.000	-12.52513	-10.01199
count127	-11.41869	1.09332	-10.444	0.000	-13.56577	-9.271614
count128	-9.854433	.9681078	-10.179	0.000	-11.75562	-7.953247
count129	-12.34601	1.140907	-10.821	0.000	-14.58654	-10.10548
count130	-13.24868	.9877967	-13.412	0.000	-15.18853	-11.30883
count131	-12.58026	.9548282	-13.175	0.000	-14.45537	-10.70516
count132	-13.32135	1.106466	-12.040	0.000	-15.49425	-11.14845
count133	-9.713415	1.050328	-9.248	0.000	-11.77607	-7.650764
count134	-10.20983	1.024616	-9.965	0.000	-12.22199	-8.197674
count135	-16.40169	.9153423	-17.919	0.000	-18.19926	-14.60413
count136	-11.64762	1.255065	-9.280	0.000	-14.11234	-9.182908
count137	-13.11922	1.316072	-9.968	0.000	-15.70374	-10.5347
count138	-12.75541	1.056374	-12.075	0.000	-14.82994	-10.68089
count139	-9.488589	1.094322	-8.671	0.000	-11.63764	-7.339543
count140	-12.29651	.5842036	-21.048	0.000	-13.44378	-11.14924
count141	-11.31587	.9253036	-12.229	0.000	-13.133	-9.498746
count142	-14.44986	.7669027	-18.842	0.000	-15.95592	-12.94381
count143	-12.54656	.5936342	-21.135	0.000	-13.71234	-11.38077
count144	(dropped)					
count145	-12.22963	.5574177	-21.940	0.000	-13.32429	-11.13496

```
230. predict pla5emis;
(237 missing values generated)

231. predict se_emis, stdf;
```

(237 missing values generated)

232. generate u = pla5emis-la5emis;
(259 missing values generated)

233. 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	1962	.	5.11556	.	.
667.	CHINA	1992	6.809625	6.518021	.291604	.3092929
668.	CHINA	1982	6.038598	6.02307	.0155277	.2955646
669.	CHINA	1972	5.28599	5.294098	-.0081086	.2952496
670.	CHINA	1967	4.693098	4.844869	-.1517706	.3022205
671.	CHINA	1977	5.782127	5.733543	.048584	.2943966
672.	CHINA	1987	6.369974	6.274206	.0957675	.2998435

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

	coun	year	pla5emis	la5emis	u	se_emis
681.	INDIA	1992	5.112784	5.236049	-.1232648	.2998253
682.	INDIA	1972	3.978205	3.99889	-.020685	.2875512
683.	INDIA	1962	3.568996	3.510835	.0581615	.2889447
684.	INDIA	1982	4.528541	4.575284	-.0467434	.2893448
685.	INDIA	1977	4.236248	4.255882	-.0196342	.2876721
686.	INDIA	1967	3.814387	3.802467	.0119197	.2874563
687.	INDIA	1957	3.283885	3.157894	.1259911	.2921161
688.	INDIA	1987	4.792036	4.901045	-.1090093	.29261

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

	coun	year	pla5emis	la5emis	u	se_emis
481.	MEXICO	1992	4.414018	4.441646	-.0276284	.2938399
482.	MEXICO	1957	2.396344	2.41135	-.0150061	.293224

```
 >
483.            MEXICO      1962   2.783767   2.810968  -.0272009   .2897258
 >
484.            MEXICO      1967   3.034741   3.050069  -.0153275   .2879647
 >
485.            MEXICO      1972   3.473347   3.374826   .0985212   .2871895
 >
486.            MEXICO      1977   3.795045   3.748322   .0467227   .2880723
 >
487.            MEXICO      1987   4.405915   4.338542   .0673723   .2931336
 >
488.            MEXICO      1982   4.093513   4.248595  -.1550817   .2896755
 >
```

```
236. gen err = (pla5emis - la5emis);
(259 missing values generated)

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

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

239. gen err2 = (p5emis - a5emis)/a5emis;
(259 missing values generated)

240. gen sqerr = (pla5emis - la5emis)*(pla5emis - la5emis);
(259 missing values generated)

241. gen sumsqerr = sum(sqerr);

242. list sumsqerr if time==43;

      sumsqerr
   2.  .0022386
  10.  .2058697
  19.  1.071315
  28.  1.268276
  35.  1.632731
  42.  2.289336
  50.  3.281903
  57.   4.73029
  67.  5.444443
  75.  5.818602
  83.  6.202617
  90.  6.319995
  97.  7.037079
 105.  7.101067
 113.  7.256572
 121.  8.412303
 131.  10.26575
 138.  10.37567
 147.   10.5178
 153.  10.74477
```

162.	10.85981
169.	11.65756
179.	12.29591
185.	13.43303
193.	13.6396
202.	13.76883
209.	15.72444
217.	16.5869
225.	17.04376
233.	18.17785
241.	19.2957
249.	20.80784
259.	22.81589
266.	23.06074
275.	23.52149
283.	24.22782
290.	26.07178
298.	27.02678
305.	27.50036
316.	27.91296
321.	28.81488
329.	29.27288
339.	29.27776
346.	29.34789
353.	29.39387
361.	31.028
372.	31.83654
379.	32.01646
388.	32.20852
394.	32.30558
405.	32.54456
409.	32.6362
417.	32.71341
428.	32.81553
433.	32.81911
441.	33.10723
449.	33.4465
457.	33.79287
465.	34.00323
474.	34.17403
481.	34.61694
489.	34.68786
497.	35.2583
505.	35.92136
520.	36.16949
522.	36.16949
529.	36.29019
537.	36.8567
545.	36.90088
553.	36.94491
561.	37.20975
569.	37.34658
577.	37.5743
585.	37.81027

593. 38.59785
601. 38.73521
609. 39.22065
618. 39.45242
625. 39.67769
633. 40.32531
644. 41.60561
651. 42.0009
661. 44.02361
667. 44.10863
674. 44.14559
681. 44.17887
691. 44.3527
697. 44.53095
706. 44.81536
713. 45.17125
721. 45.3673
730. 45.55721
738. 45.89727
750. 46.24776
754. 46.2842
761. 46.47001
771. 46.56057
780. 46.77325
785. 47.09173
793. 47.50811
807. 48.06172
811. 48.10437
817. 49.09126
825. 50.6689
834. 51.20402
841. 51.29299
849. 51.44055
863. 52.10363
867. 52.14608
873. 52.27401
881. 52.548
889. 53.00278
897. 53.13568
905. 53.61624
913. 53.77618
921. 53.80662
929. 54.69404
939. 54.86378
945. 54.87234
953. 55.28134
965. 55.93726
969. 56.11075
977. 56.44584
985. 56.57525
993. 57.15986
1001. 57.56167
1009. 57.72696
1017. 58.00216

```
1028.  58.36778
1033.  58.59916
1041.  58.99921
1049.  59.21857
1057.  59.46565
1065.  59.64792
1073.  59.77859
1081.  60.10118
1089.  60.43054
1099.   60.4837
1105.  60.51638
1114.  60.60683
1121.  60.82635
1131.  60.93406
1140.  61.69646
1148.  61.69646
1155.  61.70148

243. 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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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 lgdpl5 = ln(gdp_ppp[_n-5]);
(1501 missing values generated)

4. generate lgdpl6 = ln(gdp_ppp[_n-6]);
(1502 missing values generated)

5. generate lpopl5 = 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. **replace devduma = 0 if dev2>=4500;**
(2451 real changes made)

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

96. **gen devduma1 = dev2 >= 0;**

97. **replace devduma1 = 0 if dev2>=717;**
(5933 real changes made)

98. **gen devduma2 = dev2 >= 717;**

99. **replace devduma2 = 0 if dev2>=972;**
(5331 real changes made)

100. **gen devduma3 = dev2 >= 972;**

101. **replace devduma3 = 0 if dev2>=1313;**
(4729 real changes made)

102. **gen devduma4 = dev2 >= 1313;**

103. **replace devduma4 = 0 if dev2>=1931;**
(4127 real changes made)

104. **gen devduma5 = dev2 >=1931;**

105. **replace devduma5 = 0 if dev2>=2875;**
(3526 real changes made)

106. **gen devduma6 = dev2 >= 2875;**

107. **replace devduma6 = 0 if dev2>=3799;**
(2881 real changes made)

108. **gen devduma7 = dev2 >= 3799;**

```
109. replace devduma7 = 0 if dev2>=5091;
(2322 real changes made)

110. gen devduma8 = dev2 >= 5091;

111. replace devduma8 = 0 if dev2>=7638;
(1677 real changes made)

112. gen devduma9 = dev2 >= 7638;

113. replace devduma9 = 0 if dev2>=11566;
(1075 real changes made)

114. gen devdumb1 = devduma1*lgdpl5;
(1501 missing values generated)

115. gen devdumb2 = devduma2*lgdpl5;
(1501 missing values generated)

116. gen devdumb3 = devduma3*lgdpl5;
(1501 missing values generated)

117. gen devdumb4 = devduma4*lgdpl5;
(1501 missing values generated)

118. gen devdumb5 = devduma5*lgdpl5;
(1501 missing values generated)

119. gen devdumb6 = devduma6*lgdpl5;
(1501 missing values generated)

120. gen devdumb7 = devduma7*lgdpl5;
(1501 missing values generated)

121. gen devdumb8 = devduma8*lgdpl5;
(1501 missing values generated)

122. gen devdumb9 = devduma9*lgdpl5;
(1501 missing values generated)

123. gen afrdum = counindx<=50;

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

125. gen namdum = counindx<=72;

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

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

```
128. gen samdum = counindx<=84;

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

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

131. gen asiadum = counindx<=115;

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

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

134. gen eurodum = counindx<=144;

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

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

137. gen ausdum = counindx<=152;

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

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

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

141. generate invl5 = invest[_n-5]/100;
(1499 missing values generated)

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

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

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

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

146. generate timesq = time*time;
```

```
147. gen trend = time;

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

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

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

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

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

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

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

155. drop if counindx==151;
(43 observations deleted)

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

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

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

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

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

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

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

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

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

165. drop if time==31;
```

(145 observations deleted)

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

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

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

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

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

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

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

173. **drop if time==21;**
(145 observations deleted)

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

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

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

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

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

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

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

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

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

183. **drop if time==9;**

(145 observations deleted)

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

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

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

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

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

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

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

191. **set matsize 300;**

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

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

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

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

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

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

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

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

200. **generate time2sq = time2*time2;**

201. **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	

```
202. xtreg la5emis lgdpl5 lgdpl6 lpopl5 invl5 devdumb1 devdumb2 devdumb3 devdumb4
  > devdumb5
  > devdumb6 devdumb7 devdumb8 devdumb9 if time<=42, fe i(counindx);

                                                Fixed-effects (within) regression
sd(u_counindx)                 =  2.283518      Number of obs =       770
sd(e_counindx_t)               =  .2685496                 n =       140
sd(e_counindx_t + u_counindx)  =  2.299255            T-bar =       5.5

corr(u_counindx, Xb)           =   -0.5436      R-sq within   =    0.8080
                                                      between  =    0.4430
                                                      overall  =    0.4468
```

F(13,   617) = 199.71
Prob > F = 0.0000

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	.7134398	.2044142	3.490	0.001	.3120079	1.114872
lgdpl6	-.1898134	.1957103	-0.970	0.332	-.5741524	.1945256
lpopl5	.712361	.1192193	5.975	0.000	.4782362	.9464857
invl5	1.315251	.2446508	5.376	0.000	.8348015	1.7957
devdumb1	.039138	.1341588	0.292	0.771	-.2243252	.3026013
devdumb2	.3757306	.1313907	2.860	0.004	.1177034	.6337579
devdumb3	.5004218	.1303761	3.838	0.000	.2443872	.7564565
devdumb4	.3646661	.1032759	3.531	0.000	.1618513	.567481
devdumb5	.4781959	.094904	5.039	0.000	.291822	.6645699
devdumb6	.2558597	.0926949	2.760	0.006	.0738239	.4378955
devdumb7	.2501385	.0979604	2.553	0.011	.0577623	.4425147
devdumb8	.2243427	.0947879	2.367	0.018	.0381966	.4104888
devdumb9	.151814	.0949675	1.599	0.110	-.0346847	.3383128
_cons	-13.1835	.6298169	-20.932	0.000	-14.42034	-11.94665
counindx	F(139,617) =	27.273	0.000	(140 categories)		

```
203 . regress la5emis lgdpl5 lgdpl6 lpopl5 invl5 devdumb1 devdumb2 devdumb3 devdumb
  > 4 devdumb5
  > devdumb6 devdumb7 devdumb8 devdumb9 count* if time<=42, noconstant;
```

Source	SS	df	MS		
Model	5197.53584	153	33.9708225	Number of obs =	770
Residual	44.4973382	617	.072118862	F(153, 617) =	471.04
				Prob > F =	0.0000
				R-squared =	0.9915
				Adj R-squared =	0.9894
Total	5242.03317	770	6.80783529	Root MSE =	.26855

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	.7134396	.2044142	3.490	0.001	.3120076	1.114871
lgdpl6	-.1898131	.1957103	-0.970	0.332	-.5741521	.1945259
lpopl5	.7123609	.1192193	5.975	0.000	.4782362	.9464857
invl5	1.315251	.2446508	5.376	0.000	.8348014	1.7957
devdumb1	.039138	.1341588	0.292	0.771	-.2243253	.3026013
devdumb2	.3757306	.1313907	2.860	0.004	.1177034	.6337579
devdumb3	.5004218	.1303761	3.838	0.000	.2443872	.7564564
devdumb4	.3646661	.1032759	3.531	0.000	.1618513	.567481
devdumb5	.4781959	.094904	5.039	0.000	.291822	.6645699
devdumb6	.2558597	.0926949	2.760	0.006	.073824	.4378955
devdumb7	.2501385	.0979604	2.553	0.011	.0577623	.4425147
devdumb8	.2243426	.0947879	2.367	0.018	.0381965	.4104887
devdumb9	.1518139	.0949675	1.599	0.110	-.0346848	.3383127
count1	-15.40031	.8481971	-18.157	0.000	-17.06601	-13.73461
count2	-11.23638	1.032939	-10.878	0.000	-13.26488	-9.207877
count3	-16.43419	.9573151	-17.167	0.000	-18.31418	-14.5542
count4	-13.7836	.6102834	-22.586	0.000	-14.98208	-12.58511

count5	-13.49811	.9810285	-13.759	0.000	-15.42467	-11.57155
count6	-13.90912	.926533	-15.012	0.000	-15.72866	-12.08958
count7	-16.33391	1.052871	-15.514	0.000	-18.40156	-14.26627
count8	-13.01742	.6172787	-21.088	0.000	-14.22965	-11.8052
count9	-12.88585	.8829399	-14.594	0.000	-14.61978	-11.15192
count10	-13.40414	.9512932	-14.090	0.000	-15.2723	-11.53597
count11	-11.9892	.6500663	-18.443	0.000	-13.26582	-10.71259
count12	-14.6265	.6396607	-22.866	0.000	-15.88268	-13.37033
count13	-12.12764	.5599853	-21.657	0.000	-13.22734	-11.02793
count14	-14.65452	.9909879	-14.788	0.000	-16.60064	-12.7084
count15	-13.78185	1.131658	-12.178	0.000	-16.00422	-11.55948
count16	-11.21885	.7112657	-15.773	0.000	-12.61565	-9.822057
count17	-14.41725	.7353274	-19.607	0.000	-15.8613	-12.9732
count18	-16.18964	1.075524	-15.053	0.000	-18.30177	-14.0775
count19	-14.59762	.9240073	-15.798	0.000	-16.4122	-12.78304
count20	-11.89943	.7427626	-16.021	0.000	-13.35808	-10.44078
count21	-14.72516	.8469133	-17.387	0.000	-16.38834	-13.06198
count22	-15.00517	1.037011	-14.470	0.000	-17.04167	-12.96867
count23	-13.1727	.8309884	-15.852	0.000	-14.80461	-11.54079
count24	-16.82253	1.065836	-15.783	0.000	-18.91564	-14.72942
count25	-12.57206	.9756351	-12.886	0.000	-14.48803	-10.65609
count26	-13.18507	.9792074	-13.465	0.000	-15.10805	-11.26208
count27	-13.76321	.8146251	-16.895	0.000	-15.36298	-12.16344
count28	-13.06942	.72998	-17.904	0.000	-14.50297	-11.63587
count29	-16.01498	.8401849	-19.061	0.000	-17.66495	-14.36501
count30	-15.5075	1.061201	-14.613	0.000	-17.5915	-13.4235
count31	-15.71115	.9357139	-16.791	0.000	-17.54872	-13.87358
count32	-15.78955	1.038215	-15.208	0.000	-17.82842	-13.75069
count33	-13.6901	.5531975	-24.747	0.000	-14.77648	-12.60372
count34	-16.39405	.9162274	-17.893	0.000	-18.19335	-14.59475
count35	-15.62195	1.019701	-15.320	0.000	-17.62446	-13.61945
count36	-11.12126	.3853707	-28.859	0.000	-11.87806	-10.36447
count37	-15.86036	.9568243	-16.576	0.000	-17.73939	-13.98133
count38	-15.85066	.9505007	-16.676	0.000	-17.71727	-13.98405
count39	-12.14808	.9065754	-13.400	0.000	-13.92842	-10.36773
count40	-15.79199	1.11093	-14.215	0.000	-17.97365	-13.61033
count41	-12.29828	.5753159	-21.377	0.000	-13.4281	-11.16847
count42	-12.42534	1.06357	-11.683	0.000	-14.514	-10.33668
count43	-14.37386	.842316	-17.065	0.000	-16.02801	-12.7197
count44	-15.03431	.7606356	-19.765	0.000	-16.52806	-13.54056
count45	-13.16138	1.04942	-12.542	0.000	-15.22225	-11.10052
count46	-12.45104	1.128783	-11.031	0.000	-14.66777	-10.23432
count47	-14.03885	.9761787	-14.381	0.000	-15.95589	-12.12181
count48	-14.53314	1.053069	-13.801	0.000	-16.60117	-12.4651
count49	-10.02304	.7043541	-14.230	0.000	-11.40626	-8.639815
count50	-11.30419	.6078731	-18.596	0.000	-12.49794	-10.11044
count51	-11.5432	.6201337	-18.614	0.000	-12.76103	-10.32537
count52	-9.343311	1.152195	-8.109	0.000	-11.60601	-7.080612
count53	-13.02427	.6747497	-19.302	0.000	-14.34936	-11.69919
count54	(dropped)					
count55	-15.11062	.7332237	-20.608	0.000	-16.55053	-13.6707
count56	-15.55458	.712223	-21.839	0.000	-16.95325	-14.1559
count57	-15.82522	.7470202	-21.184	0.000	-17.29223	-14.35821
count58	-16.60982	1.006612	-16.501	0.000	-18.58662	-14.63302

count59	-14.03916	.753754	-18.626	0.000	-15.5194	-12.55893
count60	-13.81198	.6714874	-20.569	0.000	-15.13066	-12.4933
count61	-13.44983	1.138247	-11.816	0.000	-15.68513	-11.21452
count62	-14.06302	.7452587	-18.870	0.000	-15.52658	-12.59947
count63	-12.3476	.6653816	-18.557	0.000	-13.65429	-11.04091
count64	-11.7678	.8527333	-13.800	0.000	-13.44242	-10.09319
count65	(dropped)					
count66	(dropped)					
count67	-10.18188	.7984564	-12.752	0.000	-11.7499	-8.613854
count68	-9.703069	1.406803	-6.897	0.000	-12.46577	-6.940367
count69	-13.09858	1.068089	-12.264	0.000	-15.19611	-11.00105
count70	-15.40805	.733366	-21.010	0.000	-16.84825	-13.96786
count71	-14.66883	1.22352	-11.989	0.000	-17.0716	-12.26606
count72	-12.97318	.9861791	-13.155	0.000	-14.90985	-11.0365
count73	-13.51091	.8973699	-15.056	0.000	-15.27317	-11.74864
count74	-13.50719	.7886545	-17.127	0.000	-15.05596	-11.95842
count75	-12.20547	.6243437	-19.549	0.000	-13.43157	-10.97938
count76	-15.49784	.6799614	-22.792	0.000	-16.83316	-14.16252
count77	-13.66888	.8588995	-15.914	0.000	-15.3556	-11.98216
count78	-10.66707	.5472639	-19.492	0.000	-11.74179	-9.592341
count79	-12.5004	.8428499	-14.831	0.000	-14.1556	-10.8452
count80	-12.1464	.9851927	-12.329	0.000	-14.08114	-10.21166
count81	-8.050359	.7421253	-10.848	0.000	-9.507756	-6.592961
count82	-19.48686	1.336811	-14.577	0.000	-22.11211	-16.86161
count83	(dropped)					
count84	-17.8767	1.602741	-11.154	0.000	-21.02419	-14.72921
count85	-11.80855	.9683704	-12.194	0.000	-13.71025	-9.906844
count86	-17.0868	1.475297	-11.582	0.000	-19.98401	-14.18958
count87	-17.67563	1.392186	-12.696	0.000	-20.40963	-14.94163
count88	-13.35674	.9391778	-14.222	0.000	-15.20111	-11.51237
count89	-12.64431	.9726386	-13.000	0.000	-14.5544	-10.73423
count90	-11.11245	.9286083	-11.967	0.000	-12.93607	-9.288837
count91	-12.55223	1.321104	-9.501	0.000	-15.14663	-9.957824
count92	-12.35182	.6932467	-17.817	0.000	-13.71323	-10.99041
count93	-13.3313	.9424329	-14.146	0.000	-15.18206	-11.48053
count94	-8.714134	.9243987	-9.427	0.000	-10.52948	-6.898785
count95	-13.26742	1.035494	-12.813	0.000	-15.30094	-11.2339
count96	-12.603	1.143823	-11.018	0.000	-14.84926	-10.35674
count97	-17.3182	1.053127	-16.445	0.000	-19.38635	-15.25005
count98	-10.92388	.7482348	-14.600	0.000	-12.39328	-9.454488
count99	-17.2175	1.29559	-13.289	0.000	-19.7618	-14.6732
count100	-15.54414	1.00667	-15.441	0.000	-17.52106	-13.56723
count101	-7.862902	.7761703	-10.130	0.000	-9.387158	-6.338647
count102	-9.301793	1.031676	-9.016	0.000	-11.32782	-7.27577
count103	-11.07846	.8218404	-13.480	0.000	-12.6924	-9.464517
count104	-15.50168	.90233	-17.180	0.000	-17.27369	-13.72967
count105	-13.03086	.9635377	-13.524	0.000	-14.92307	-11.13865
count106	-12.80308	1.020601	-12.545	0.000	-14.80735	-10.7988
count107	-16.97764	.9132616	-18.590	0.000	-18.77112	-15.18416
count108	-8.45394	.9165883	-9.223	0.000	-10.25395	-6.653929
count109	-14.87973	.8691088	-17.121	0.000	-16.5865	-13.17296
count110	-11.45326	1.031773	-11.101	0.000	-13.47947	-9.427044
count111	-10.9639	1.062124	-10.323	0.000	-13.04971	-8.878079
count112	-12.06195	1.024996	-11.768	0.000	-14.07485	-10.04905

count113	-11.42567	.6904013	-16.549	0.000	-12.78149	-10.06984
count114	-11.39579	.8765134	-13.001	0.000	-13.1171	-9.674477
count115	-10.98573	.9910264	-11.085	0.000	-12.93192	-9.039531
count116	-11.36463	.983258	-11.558	0.000	-13.29557	-9.433697
count117	-10.15389	1.244744	-8.157	0.000	-12.59834	-7.709442
count118	-10.80527	1.133517	-9.533	0.000	-13.03129	-8.579249
count119	-9.830648	1.263385	-7.781	0.000	-12.3117	-7.349591
count120	-12.61444	.9637894	-13.088	0.000	-14.50715	-10.72174
count121	-12.21054	1.019551	-11.976	0.000	-14.21275	-10.20833
count122	-8.814297	.6455169	-13.655	0.000	-10.08197	-7.54662
count123	-11.57205	.8603848	-13.450	0.000	-13.26168	-9.882409
count124	-12.6049	1.249789	-10.086	0.000	-15.05926	-10.15055
count125	-7.671496	.7160921	-10.713	0.000	-9.077769	-6.265222
count126	-11.26856	.6398606	-17.611	0.000	-12.52513	-10.01199
count127	-11.41869	1.09332	-10.444	0.000	-13.56577	-9.271614
count128	-9.854433	.9681078	-10.179	0.000	-11.75562	-7.953247
count129	-12.34601	1.140907	-10.821	0.000	-14.58654	-10.10548
count130	-13.24868	.9877967	-13.412	0.000	-15.18853	-11.30883
count131	-12.58026	.9548282	-13.175	0.000	-14.45537	-10.70516
count132	-13.32135	1.106466	-12.040	0.000	-15.49425	-11.14845
count133	-9.713415	1.050328	-9.248	0.000	-11.77607	-7.650764
count134	-10.20983	1.024616	-9.965	0.000	-12.22199	-8.197674
count135	-16.40169	.9153423	-17.919	0.000	-18.19926	-14.60413
count136	-11.64762	1.255065	-9.280	0.000	-14.11234	-9.182908
count137	-13.11922	1.316072	-9.968	0.000	-15.70374	-10.5347
count138	-12.75541	1.056374	-12.075	0.000	-14.82994	-10.68089
count139	-9.488589	1.094322	-8.671	0.000	-11.63764	-7.339543
count140	-12.29651	.5842036	-21.048	0.000	-13.44378	-11.14924
count141	-11.31587	.9253036	-12.229	0.000	-13.133	-9.498746
count142	-14.44986	.7669027	-18.842	0.000	-15.95592	-12.94381
count143	-12.54656	.5936342	-21.135	0.000	-13.71234	-11.38077
count144	(dropped)					
count145	-12.22963	.5574177	-21.940	0.000	-13.32429	-11.13496

204. predict pla5emis;
(237 missing values generated)

205. predict se_emis, stdf;
(237 missing values generated)

206. generate u = pla5emis-la5emis;
(259 missing values generated)

207. 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	6.809625	6.518021	.291604	.3092929

668.	CHINA	1987	6.369974	6.274206	.0957675	.2998435
669.	CHINA	1972	5.28599	5.294098	-.0081086	.2952496
670.	CHINA	1967	4.693098	4.844869	-.1517706	.3022205
671.	CHINA	1982	6.038598	6.02307	.0155277	.2955646
672.	CHINA	1977	5.782127	5.733543	.048584	.2943966

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

	coun	year	pla5emis	la5emis	u	se_emis
681.	INDIA	1992	5.112784	5.236049	-.1232648	.2998253
682.	INDIA	1957	3.283885	3.157894	.1259911	.2921161
683.	INDIA	1972	3.978205	3.99889	-.020685	.2875512
684.	INDIA	1977	4.236248	4.255882	-.0196342	.2876721
685.	INDIA	1967	3.814387	3.802467	.0119197	.2874563
686.	INDIA	1987	4.792036	4.901045	-.1090093	.29261
687.	INDIA	1982	4.528541	4.575284	-.0467434	.2893448
688.	INDIA	1962	3.568996	3.510835	.0581615	.2889447

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

	coun	year	pla5emis	la5emis	u	se_emis
481.	MEXICO	1992	4.414018	4.441646	-.0276284	.2938399
482.	MEXICO	1957	2.396344	2.41135	-.0150061	.293224
483.	MEXICO	1987	4.405915	4.338542	.0673723	.2931336
484.	MEXICO	1967	3.034741	3.050069	-.0153275	.2879647
485.	MEXICO	1972	3.473347	3.374826	.0985212	.2871895
486.	MEXICO	1962	2.783767	2.810968	-.0272009	.2897258
487.	MEXICO	1977	3.795045	3.748322	.0467227	.2880723
488.	MEXICO	1982	4.093513	4.248595	-.1550817	.2896755

210. gen err = (pla5emis - la5emis);

(259 missing values generated)

```
211. gen p5emis = exp(pla5emis);
(237 missing values generated)

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

213. gen err2 = (p5emis - a5emis)/a5emis;
(259 missing values generated)

214. gen sqerr = (pla5emis - la5emis)*(pla5emis - la5emis);
(259 missing values generated)

215. gen sumsqerr = sum(sqerr);

216. list sumsqerr if time==43;

      sumsqerr
   1.  .0022386
   9.  .2058697
  18.  1.071315
  26.  1.268276
  34.  1.632731
  42.  2.289336
  50.  3.281903
  58.   4.73029
  67.  5.444443
  73.  5.818602
  81.  6.202617
  90.  6.319995
  98.  7.037079
 105.  7.101067
 113.  7.256572
 123.  8.412303
 129.  10.26575
 137.  10.37567
 146.   10.5178
 155.  10.74477
 163.  10.85981
 169.  11.65756
 178.  12.29591
 186.  13.43303
 194.   13.6396
 203.  13.76883
 211.  15.72444
 217.   16.5869
 225.  17.04376
 235.  18.17785
 241.   19.2957
 249.  20.80784
 257.  22.81589
 267.  23.06074
 275.  23.52149
```

283. 24.22782
290. 26.07178
299. 27.02678
305. 27.50036
314. 27.91296
323. 28.81488
335. 29.27288
339. 29.27776
347. 29.34789
353. 29.39387
361. 31.028
371. 31.83654
379. 32.01646
388. 32.20852
395. 32.30558
407. 32.54456
409. 32.6362
417. 32.71341
426. 32.81553
433. 32.81911
441. 33.10723
449. 33.4465
459. 33.79287
465. 34.00323
474. 34.17403
481. 34.61694
489. 34.68786
497. 35.2583
506. 35.92136
513. 36.16949
526. 36.16949
529. 36.29019
537. 36.8567
545. 36.90088
553. 36.94491
561. 37.20975
569. 37.34658
577. 37.5743
585. 37.81027
593. 38.59785
601. 38.73521
609. 39.22065
619. 39.45242
625. 39.67769
633. 40.32531
643. 41.60561
649. 42.0009
660. 44.02361
667. 44.10863
675. 44.14559
681. 44.17887
689. 44.3527
697. 44.53095
706. 44.81536

714.	45.17125
721.	45.3673
729.	45.55721
738.	45.89727
750.	46.24776
755.	46.2842
761.	46.47001
771.	46.56057
781.	46.77325
785.	47.09173
793.	47.50811
801.	48.06172
810.	48.10437
819.	49.09126
825.	50.6689
835.	51.20402
841.	51.29299
849.	51.44055
857.	52.10363
865.	52.14608
873.	52.27401
881.	52.548
890.	53.00278
897.	53.13568
906.	53.61624
913.	53.77618
921.	53.80662
929.	54.69404
941.	54.86378
945.	54.87234
953.	55.28134
964.	55.93726
969.	56.11075
977.	56.44584
985.	56.57525
993.	57.15986
1002.	57.56167
1009.	57.72696
1017.	58.00216
1025.	58.36778
1033.	58.59916
1043.	58.99921
1049.	59.21857
1057.	59.46565
1065.	59.64792
1073.	59.77859
1081.	60.10118
1089.	60.43054
1097.	60.4837
1105.	60.51638
1114.	60.60683
1121.	60.82635
1129.	60.93406
1143.	61.69646

1147. 61.69646
1156. 61.70148

```
217. 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

.
```

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. **replace devduma = 0 if dev2>=4500;**
(2451 real changes made)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

110. gen ausdum = counindx<=152;

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

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

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

114. generate invl5 = invest[_n-5]/100;
(1499 missing values generated)

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

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

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

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

119. generate timesq = time*time;

120. gen trend = time;

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

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

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

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

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

126. drop if counindx==99;
```

(43 observations deleted)

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

128. **drop if counindx==151;**
(43 observations deleted)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

144. **drop if time==24;**

(145 observations deleted)

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

146. **drop if time==21;**
(145 observations deleted)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

162. **drop if time==2;**

(145 observations deleted)

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

```
164. set matsize 300;

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

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

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

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

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

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

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

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

```
173. generate time2sq = time2*time2;

174. 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	

175. xtreg la5emis lgdpl5 lgdpl6 lpopl5 invl5 devdum3a devdum3b if time<=42, fe i(
> counindx);

Fixed-effects (within) regression

sd(u_counindx)	= 1.842656	Number of obs	= 770
sd(e_counindx_t)	= .2733863	n	= 140
sd(e_counindx_t + u_counindx)	= 1.862826	T-bar	= 5.5
corr(u_counindx, Xb)	= -0.3928	R-sq within	= 0.7987
		between	= 0.5602
		overall	= 0.5723
		F(6, 624)	= 412.75
		Prob > F	= 0.0000

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	1.064766	.1963152	5.424	0.000	.6792477	1.450285
lgdpl6	-.2034737	.1969763	-1.033	0.302	-.5902904	.183343
lpopl5	.7413655	.1170409	6.334	0.000	.5115237	.9712073
invl5	1.38572	.2453539	5.648	0.000	.9039011	1.86754
devdum3a	-.0390093	.0652381	-0.598	0.550	-.1671221	.0891035
devdum3b	-.186374	.0725242	-2.570	0.010	-.3287949	-.043953
_cons	-13.4279	.6284973	-21.365	0.000	-14.66213	-12.19368
counindx	F(139,624) =	28.393	0.000		(140 categories)	

176. regress la5emis lgdpl5 lgdpl6 lpopl5 invl5 devdum3a devdum3b count* if time<
> =42, noconstant;

Source	SS	df	MS		
Model	5195.39536	146	35.5848997	Number of obs =	770
Residual	46.6378103	624	.074740081	F(146, 624) =	476.12
Total	5242.03317	770	6.80783529	Prob > F =	0.0000
				R-squared =	0.9911
				Adj R-squared =	0.9890
				Root MSE =	.27339

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	1.064766	.1963152	5.424	0.000	.6792473	1.450284
lgdpl6	-.2034733	.1969763	-1.033	0.302	-.5902901	.1833434
lpopl5	.7413655	.1170409	6.334	0.000	.5115237	.9712073
invl5	1.38572	.2453539	5.648	0.000	.9039011	1.86754
devdum3a	-.0390092	.0652381	-0.598	0.550	-.1671221	.0891036
devdum3b	-.186374	.0725242	-2.570	0.010	-.328795	-.043953
count1	-13.8491	.715324	-19.361	0.000	-15.25384	-12.44437
count2	-14.06567	.683461	-20.580	0.000	-15.40783	-12.72351
count3	-15.36529	.6206184	-24.758	0.000	-16.58404	-14.14654
count4	-12.73363	.5240774	-24.297	0.000	-13.7628	-11.70446
count5	-16.093	.6876185	-23.404	0.000	-17.44332	-14.74267
count6	-16.3668	.6464813	-25.317	0.000	-17.63634	-15.09725
count7	-15.17986	.6926176	-21.917	0.000	-16.54	-13.81972
count8	-13.00456	.4551186	-28.574	0.000	-13.89831	-12.11081
count9	-15.27197	.5984426	-25.520	0.000	-16.44718	-14.09677
count10	-15.96687	.6477994	-24.648	0.000	-17.239	-14.69474
count11	-13.70897	.4553375	-30.107	0.000	-14.60315	-12.81479
count12	-13.47517	.5438831	-24.776	0.000	-14.54323	-12.4071
count13	-12.13401	.4540285	-26.725	0.000	-13.02562	-11.2424
count14	-14.27287	.7826663	-18.236	0.000	-15.80985	-12.73589
count15	-16.74752	.8042392	-20.824	0.000	-18.32687	-15.16818
count16	-10.66233	.5983954	-17.818	0.000	-11.83744	-9.487216
count17	-13.62874	.494601	-27.555	0.000	-14.60002	-12.65745
count18	-15.00224	.7034029	-21.328	0.000	-16.38356	-13.62092
count19	-14.5442	.6555254	-22.187	0.000	-15.8315	-13.2569
count20	-13.87898	.5156188	-26.917	0.000	-14.89153	-12.86642
count21	-14.38256	.6544787	-21.976	0.000	-15.66781	-13.09731
count22	-14.94746	.7241716	-20.641	0.000	-16.36957	-13.52535
count23	-13.1226	.5753125	-22.810	0.000	-14.25238	-11.99282
count24	-15.632	.6912361	-22.615	0.000	-16.98943	-14.27457
count25	-15.16774	.6784706	-22.356	0.000	-16.50011	-13.83538
count26	-15.79083	.6803472	-23.210	0.000	-17.12687	-14.45478
count27	-13.71683	.5651779	-24.270	0.000	-14.82671	-12.60695
count28	-13.64665	.4802291	-28.417	0.000	-14.58971	-12.70359
count29	-14.54687	.722166	-20.143	0.000	-15.96504	-13.1287
count30	-15.41864	.7166671	-21.514	0.000	-16.82602	-14.01127
count31	-15.65624	.6598195	-23.728	0.000	-16.95197	-14.3605
count32	-15.82787	.844213	-18.749	0.000	-17.48571	-14.17002
count33	-12.66768	.4629489	-27.363	0.000	-13.5768	-11.75855
count34	-16.34024	.6524439	-25.045	0.000	-17.62149	-15.05899
count35	-14.4776	.657885	-22.006	0.000	-15.76953	-13.18566
count36	-11.4481	.3147019	-36.378	0.000	-12.0661	-10.83009
count37	-14.79091	.6207353	-23.828	0.000	-16.0099	-13.57193
count38	-15.78356	.6546417	-24.110	0.000	-17.06913	-14.49799

count39	-12.91821	.7293538	-17.712	0.000	-14.3505	-11.48592
count40	-15.71947	.7688661	-20.445	0.000	-17.22935	-14.20959
count41	-12.78681	.4614798	-27.708	0.000	-13.69305	-11.88057
count42	-15.13403	.7775056	-19.465	0.000	-16.66087	-13.60719
count43	-14.33902	.6084859	-23.565	0.000	-15.53394	-13.14409
count44	-13.66069	.6448847	-21.183	0.000	-14.92709	-12.39428
count45	-16.0078	.7071826	-22.636	0.000	-17.39655	-14.61905
count46	-15.49208	.76984	-20.124	0.000	-17.00387	-13.98029
count47	-13.97662	.666201	-20.980	0.000	-15.28489	-12.66835
count48	-13.35937	.6821025	-19.586	0.000	-14.69886	-12.01987
count49	-10.18435	.5572531	-18.276	0.000	-11.27867	-9.090028
count50	-10.96042	.5146279	-21.298	0.000	-11.97103	-9.949809
count51	-12.00265	.4442126	-27.020	0.000	-12.87498	-11.13031
count52	-11.48363	.9067894	-12.664	0.000	-13.26436	-9.702899
count53	-13.60163	.5402716	-25.176	0.000	-14.6626	-12.54066
count54	(dropped)					
count55	-13.79487	.6236519	-22.120	0.000	-15.01958	-12.57016
count56	-14.25319	.6030544	-23.635	0.000	-15.43745	-13.06893
count57	-14.44079	.6288998	-22.962	0.000	-15.67581	-13.20578
count58	-15.50038	.6602183	-23.478	0.000	-16.79689	-14.20386
count59	-14.06048	.6074106	-23.148	0.000	-15.25329	-12.86766
count60	-12.54931	.5588592	-22.455	0.000	-13.64678	-11.45183
count61	-12.89386	.9951618	-12.957	0.000	-14.84813	-10.93959
count62	-13.74655	.5643462	-24.358	0.000	-14.85479	-12.6383
count63	-12.91505	.5370525	-24.048	0.000	-13.9697	-11.8604
count64	-11.32206	.7336895	-15.432	0.000	-12.76286	-9.881257
count65	(dropped)					
count66	(dropped)					
count67	-10.38365	.6242589	-16.634	0.000	-11.60955	-9.157743
count68	-12.2894	1.115769	-11.014	0.000	-14.48052	-10.09828
count69	-12.55096	.9243718	-13.578	0.000	-14.36622	-10.73571
count70	-14.09819	.6232937	-22.619	0.000	-15.3222	-12.87418
count71	-15.60628	.8411509	-18.553	0.000	-17.25811	-13.95445
count72	-13.74678	.6614075	-20.784	0.000	-15.04563	-12.44792
count73	-14.26115	.7296138	-19.546	0.000	-15.69395	-12.82836
count74	-14.17024	.6427295	-22.047	0.000	-15.43242	-12.90807
count75	-11.94945	.4749597	-25.159	0.000	-12.88217	-11.01674
count76	-14.27607	.5785868	-24.674	0.000	-15.41228	-13.13985
count77	-14.39742	.6935234	-20.760	0.000	-15.75935	-13.0355
count78	-11.14657	.4337129	-25.700	0.000	-11.99828	-10.29486
count79	-12.05959	.7264432	-16.601	0.000	-13.48616	-10.63302
count80	-11.61809	.8428428	-13.784	0.000	-13.27324	-9.962941
count81	-9.490898	.5592795	-16.970	0.000	-10.5892	-8.3926
count82	-17.99377	.8652381	-20.796	0.000	-19.6929	-16.29464
count83	(dropped)					
count84	-16.12944	1.056681	-15.264	0.000	-18.20452	-14.05436
count85	-12.06022	.7735117	-15.592	0.000	-13.57922	-10.54122
count86	-16.98737	1.017437	-16.696	0.000	-18.98538	-14.98935
count87	-16.1423	.910261	-17.734	0.000	-17.92985	-14.35476
count88	-14.16031	.7478025	-18.936	0.000	-15.62883	-12.6918
count89	-12.1458	.8428209	-14.411	0.000	-13.80091	-10.49069
count90	-11.35861	.7381221	-15.389	0.000	-12.80811	-9.909104
count91	-12.9018	1.068089	-12.079	0.000	-14.99928	-10.80432
count92	-12.93049	.5640853	-22.923	0.000	-14.03823	-11.82275

count93	-14.10767	.7743709	-18.218	0.000	-15.62836	-12.58698
count94	-10.46004	.7124366	-14.682	0.000	-11.8591	-9.060974
count95	-14.0752	.7037803	-19.999	0.000	-15.45727	-12.69314
count96	-15.64041	.7983634	-19.591	0.000	-17.20821	-14.0726
count97	-17.24865	.7358996	-23.439	0.000	-18.69379	-15.80351
count98	-10.50225	.6335411	-16.577	0.000	-11.74638	-9.258114
count99	-15.79468	.8495367	-18.592	0.000	-17.46297	-14.12638
count100	-15.15053	.7865316	-19.262	0.000	-16.6951	-13.60596
count101	-9.387823	.5711339	-16.437	0.000	-10.5094	-8.266246
count102	-11.21648	.8101016	-13.846	0.000	-12.80733	-9.625622
count103	-10.66835	.7135864	-14.950	0.000	-12.06967	-9.267031
count104	-15.14502	.7049615	-21.483	0.000	-16.52941	-13.76064
count105	-13.77819	.6520885	-21.129	0.000	-15.05874	-12.49764
count106	-13.58361	.7040142	-19.295	0.000	-14.96613	-12.20109
count107	-15.38247	.7841383	-19.617	0.000	-16.92234	-13.8426
count108	-10.23248	.6876873	-14.880	0.000	-11.58294	-8.882016
count109	-14.90737	.7048318	-21.150	0.000	-16.2915	-13.52324
count110	-11.7229	.8191146	-14.312	0.000	-13.33145	-10.11434
count111	-11.24034	.8410555	-13.365	0.000	-12.89198	-9.588698
count112	-12.86932	.7060436	-18.227	0.000	-14.25583	-11.48281
count113	-11.08207	.599166	-18.496	0.000	-12.2587	-9.905445
count114	-12.14602	.7071112	-17.177	0.000	-13.53463	-10.75741
count115	-11.24372	.7784001	-14.445	0.000	-12.77232	-9.715119
count116	-11.62804	.7767112	-14.971	0.000	-13.15333	-10.10276
count117	-12.42658	.9933545	-12.510	0.000	-14.3773	-10.47585
count118	-11.10509	.9056954	-12.261	0.000	-12.88367	-9.326512
count119	-12.13631	1.008843	-12.030	0.000	-14.11744	-10.15517
count120	-12.1458	.8424241	-14.418	0.000	-13.80013	-10.49147
count121	-11.43364	.8652373	-13.214	0.000	-13.13277	-9.734511
count122	-10.06696	.4890858	-20.583	0.000	-11.02742	-9.106511
count123	-11.12774	.7422876	-14.991	0.000	-12.58542	-9.670052
count124	-12.93406	1.002585	-12.901	0.000	-14.90291	-10.96521
count125	-9.073973	.5376968	-16.876	0.000	-10.12989	-8.018058
count126	-11.77598	.4329943	-27.197	0.000	-12.62629	-10.92568
count127	-11.70335	.8658752	-13.516	0.000	-13.40373	-10.00297
count128	-11.66547	.7588374	-15.373	0.000	-13.15565	-10.17528
count129	-13.24885	.7683028	-17.244	0.000	-14.75762	-11.74007
count130	-12.52938	.8486829	-14.763	0.000	-14.196	-10.86276
count131	-12.6249	.777205	-16.244	0.000	-14.15115	-11.09865
count132	-12.76885	.9619212	-13.274	0.000	-14.65784	-10.87985
count133	-11.68004	.8211895	-14.223	0.000	-13.29267	-10.06741
count134	-12.15216	.7929025	-15.326	0.000	-13.70924	-10.59508
count135	-14.72088	.7713964	-19.083	0.000	-16.23573	-13.20604
count136	-11.96888	1.000573	-11.962	0.000	-13.93377	-10.00398
count137	-12.4938	1.15405	-10.826	0.000	-14.7601	-10.22751
count138	-12.24843	.9250948	-13.240	0.000	-14.0651	-10.43175
count139	-11.52975	.8588453	-13.425	0.000	-13.21632	-9.84317
count140	-12.80441	.4641074	-27.589	0.000	-13.71581	-11.893
count141	-11.55656	.7222299	-16.001	0.000	-12.97486	-10.13827
count142	-14.13606	.5886914	-24.013	0.000	-15.29211	-12.98
count143	-12.55678	.5024777	-24.990	0.000	-13.54353	-11.57003
count144	(dropped)					
count145	-12.02384	.4558562	-26.376	0.000	-12.91904	-11.12864

```
177. predict pla5emis;
(237 missing values generated)

178. predict se_emis, stdf;
(237 missing values generated)

179. generate u = pla5emis-la5emis;
(259 missing values generated)

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

                      coun        year   pla5emis    la5emis           u     se_emis
 >
665.                 CHINA        1992   6.677744   6.518021    .1597233    .3041891
 >
666.                 CHINA        1962          .    5.11556           .           .
 >
667.                 CHINA        1957          .   3.968974           .           .
 >
668.                 CHINA        1982   6.006622    6.02307    -.016448    .3000901
 >
669.                 CHINA        1977   5.771529   5.733543    .0379853    .2996067
 >
670.                 CHINA        1987   6.289483   6.274206    .0152764     .301139
 >
671.                 CHINA        1972   5.317445   5.294098    .0233469    .2998535
 >
672.                 CHINA        1967   4.784708   4.844869   -.0601606    .3020672
 >

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

                      coun        year   pla5emis    la5emis           u     se_emis
 >
681.                 INDIA        1992   5.095059   5.236049   -.1409898    .2956879
 >
682.                 INDIA        1957   3.290559   3.157894    .1326656    .2937436
 >
683.                 INDIA        1977   4.233808   4.255882   -.0220747    .2925332
 >
684.                 INDIA        1972   3.983543    3.99889   -.0153472    .2925768
 >
685.                 INDIA        1962   3.573157   3.510835    .0623221    .2928577
 >
686.                 INDIA        1987    4.78295   4.901045   -.1180949    .2938011
 >
687.                 INDIA        1967    3.81454   3.802467    .0120726    .2924447
 >
688.                 INDIA        1982    4.52374   4.575284   -.0515437    .2929703
 >

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

	coun	year	pla5emis	la5emis	u	se_emis
481.	MEXICO	1992	4.362482	4.441646	-.0791645	.2958584
482.	MEXICO	1987	4.352084	4.338542	.0135417	.2949765
483.	MEXICO	1977	3.775684	3.748322	.0273621	.292783
484.	MEXICO	1957	2.446544	2.41135	.0351939	.2952272
485.	MEXICO	1962	2.818789	2.810968	.0078218	.2934729
486.	MEXICO	1972	3.474117	3.374826	.0992911	.2923578
487.	MEXICO	1982	4.059832	4.248595	-.1887631	.2934489
488.	MEXICO	1967	3.055622	3.050069	.0055528	.2926074

```
183. gen err = (pla5emis - la5emis);
(259 missing values generated)

184. gen p5emis = exp(pla5emis);
(237 missing values generated)

185. gen a5emis = exp(la5emis);
(262 missing values generated)

186. gen err2 = (p5emis - a5emis)/a5emis;
(259 missing values generated)

187. gen sqerr = (pla5emis - la5emis)*(pla5emis - la5emis);
(259 missing values generated)

188. gen sumsqerr = sum(sqerr);

189. list sumsqerr if time==43;

     sumsqerr
  1. .0087593
  9. .3056083
 18. 1.158352
 27. 1.469808
 35. 1.814888
 43. 2.202486
 50. 2.896505
 57. 4.539124
 67. 5.226629
 73. 5.658272
 82. 6.090285
 90. 6.251557
 98. 6.921449
105. 6.967936
113. 7.088076
```

123. 7.825148
129. 9.83329
137. 9.986242
145. 10.11371
154. 10.25917
163. 10.30927
169. 11.06782
177. 11.66889
186. 12.82056
193. 13.13512
203. 13.41713
211. 15.35917
217. 16.21825
225. 16.63338
235. 17.6891
242. 18.8176
249. 20.35187
257. 22.46147
265. 22.85992
275. 23.31583
283. 23.99123
290. 25.68629
297. 26.63063
305. 27.11512
315. 27.59932
324. 28.54794
331. 29.05958
337. 29.0629
346. 29.10963
353. 29.20131
361. 31.49396
369. 32.79912
379. 32.96758
390. 33.09995
394. 33.22055
406. 33.49229
409. 33.6832
417. 33.83598
432. 33.94146
433. 33.94776
441. 34.39427
449. 34.60069
457. 34.81176
465. 35.0449
474. 35.22278
481. 35.82251
489. 35.89603
497. 36.55448
506. 37.24583
519. 37.43923
524. 37.43923
529. 37.55587
537. 38.16255
545. 38.26612

553. 38.34293
561. 38.69959
569. 38.90363
577. 39.19239
585. 39.45475
593. 40.12104
601. 40.25676
609. 40.76678
619. 41.02461
625. 41.23741
633. 41.847
645. 42.99166
650. 43.4951
660. 45.63529
665. 45.6608
674. 45.66973
681. 45.70789
689. 45.79936
697. 45.92682
705. 46.26455
713. 46.62574
721. 46.8334
730. 46.99171
738. 47.29055
745. 47.61815
753. 47.64477
761. 48.08778
771. 48.35963
780. 48.55781
785. 48.78043
793. 49.00142
807. 49.54669
811. 49.55512
818. 50.25681
825. 51.83216
833. 52.29405
841. 52.39929
849. 52.77747
862. 53.78966
866. 53.8387
873. 53.96901
881. 54.24406
891. 54.71004
897. 54.89711
906. 55.49469
913. 55.67797
921. 55.70784
929. 56.69184
940. 57.023
945. 57.03185
953. 57.64462
965. 58.4362
969. 58.73793
977. 59.37894

```
 985.  59.48742
 993.  60.14584
1002.  60.64428
1009.  60.82861
1017.  61.02497
1028.  61.22445
1033.  61.53338
1043.  61.95232
1049.  62.15598
1057.  62.51933
1065.  62.73024
1073.  62.77948
1081.  63.10299
1089.  63.43901
1097.   63.4688
1105.  63.50223
1115.   63.6219
1121.  63.87016
1129.  63.98732
1143.  64.78378
1147.  64.78378
1159.   64.7879

190. 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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702 University Drive East
College Station, Texas 77840
409-696-4600, fax 409-696-4601

Stata tm
Statistics/Data Analysis

```
. set more 1;

. 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;

. generate lgdpa5 =ln((gdp_ppp +gdp_ppp[_n-1] +gdp_ppp[_n-2] +gdp_ppp[_n-3] +
 > gdp_ppp[_n-4])/5);
(1943 missing values generated)

. generate lgdpa6 = ln((gdp_ppp[_n-1] +gdp_ppp[_n-2] +gdp_ppp[_n-3] +
 > gdp_ppp[_n-4] + gdp_ppp[_n-5])/5);
(1943 missing values generated)

. generate lpopa5 = ln((pop +pop[_n-1] + pop[_n-2] + pop[_n-3] + pop[_n-4])/5);
(1908 missing values generated)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

36. replace dev = popgdp[_n-7] if time==28;
(133 real changes made)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

90. replace dev2 = popgdp[_n-8] if time==39;
(142 real changes made)

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

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

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

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

95. gen devdum = dev >= 4000;

96. gen devduma = dev2 >=1610;

97. gen devdumb = dev2 >=4500;

98. gen afrdum = counindx<=50;

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

100. gen namdum = counindx<=72;

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

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

103. gen samdum = counindx<=84;

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

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

106. gen asiadum = counindx<=115;
```

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

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

109. gen eurodum = counindx<=144;

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

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

112. gen ausdum = counindx<=152;

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

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

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

116. gen inva5 = ((inv + inv[_n-1] + inv[_n-2] + inv[_n-3] + inv[_n-4])/5);
(1941 missing values generated)

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

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

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

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

121. gen devdum5a = (devduma*lgdpa5);
(1943 missing values generated)

122. gen devdum5b = (devdumb*lgdpa5);
(1943 missing values generated)

123. generate timesq = time*time;

124. gen trend = time;

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

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

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

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

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

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

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

132. drop if counindx==151;
(43 observations deleted)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

150. drop if time==21;
(145 observations deleted)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

168. set matsize 300;

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

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

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

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

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

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

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

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

177. generate time2sq = time2*time2;

178. 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	

```
179. xtreg la5emis lgdpa5 lgdpa6 lpopa5 inva5 devdum5a devdum5b if time<=42, fe i(
  > counindx);

                                                Fixed-effects (within) regression
sd(u_counindx)                  =   1.80951     Number of obs =       769
sd(e_counindx_t)                =   .255905           n =       140
sd(e_counindx_t + u_counindx)=  1.827515          T-bar = 5.49286

corr(u_counindx, Xb)            =   -0.4364     R-sq within   =  0.8255
                                                      between  =  0.5947
                                                      overall  =  0.6141

                                                F(  6,    623) =  491.08
                                                     Prob > F =  0.0000

------------------------------------------------------------------------------
 la5emis |      Coef.   Std. Err.      t     P>|t|       [95% Conf. Interval]
```

lgdpa5	.5962705	.3694481	1.614	0.107	-.1292439	1.321785
lgdpa6	.3746404	.373033	1.004	0.316	-.357914	1.107195
lpopa5	.7017215	.1052816	6.665	0.000	.4949717	.9084714
inva5	2.1825	.2705374	8.067	0.000	1.651224	2.713776
devdum5a	-.0838915	.0641039	-1.309	0.191	-.2097773	.0419944
devdum5b	-.1123089	.0537798	-2.088	0.037	-.2179206	-.0066973
_cons	-14.1978	.5881326	-24.140	0.000	-15.35276	-13.04283
counindx	F(139,623) =		29.353	0.000	(140 categories)	

180. regress la5emis lgdpa5 lgdpa6 lpopa5 inva5 devdum5a devdum5b count* if time<
> =42,
> noconstant;

Source	SS	df	MS		
Model	5197.36913	146	35.5984187	Number of obs =	769
Residual	40.7986456	623	.065487393	F(146, 623) =	543.59
Total	5238.16778	769	6.81166161	Prob > F =	0.0000
				R-squared =	0.9922
				Adj R-squared =	0.9904
				Root MSE =	.25591

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpa5	.596269	.3694481	1.614	0.107	-.1292454	1.321783
lgdpa6	.374642	.373033	1.004	0.316	-.3579124	1.107196
lpopa5	.7017214	.1052816	6.665	0.000	.4949715	.9084712
inva5	2.1825	.2705374	8.067	0.000	1.651224	2.713776
devdum5a	-.0838915	.0641039	-1.309	0.191	-.2097774	.0419944
devdum5b	-.112309	.0537798	-2.088	0.037	-.2179207	-.0066973
count1	-14.54508	.6692566	-21.733	0.000	-15.85935	-13.2308
count2	-14.77835	.6493316	-22.759	0.000	-16.05349	-13.50321
count3	-16.11165	.594304	-27.110	0.000	-17.27873	-14.94456
count4	-13.37429	.4917072	-27.200	0.000	-14.33989	-12.40869
count5	-16.7741	.6482668	-25.875	0.000	-18.04716	-15.50105
count6	-16.98287	.6110702	-27.792	0.000	-18.18288	-15.78286
count7	-16.06897	.6615062	-24.291	0.000	-17.36802	-14.76992
count8	-13.66116	.4319357	-31.628	0.000	-14.50939	-12.81294
count9	-15.8702	.5667718	-28.001	0.000	-16.98322	-14.75719
count10	-16.52354	.6120764	-26.996	0.000	-17.72553	-15.32156
count11	-14.34105	.4332818	-33.099	0.000	-15.19192	-13.49018
count12	-13.91684	.5096417	-27.307	0.000	-14.91766	-12.91601
count13	-12.86183	.4438815	-28.976	0.000	-13.73352	-11.99015
count14	-14.74494	.7272517	-20.275	0.000	-16.17311	-13.31678
count15	-17.51301	.7541153	-23.223	0.000	-18.99393	-16.0321
count16	-11.54197	.5855005	-19.713	0.000	-12.69176	-10.39217
count17	-14.26284	.4750061	-30.027	0.000	-15.19564	-13.33003
count18	-15.82076	.6710468	-23.576	0.000	-17.13855	-14.50297
count19	-15.20164	.619816	-24.526	0.000	-16.41883	-13.98446
count20	-14.5225	.4885112	-29.728	0.000	-15.48183	-13.56317
count21	-14.92311	.6139161	-24.308	0.000	-16.1287	-13.71751
count22	-15.8523	.6901341	-22.970	0.000	-17.20757	-14.49703
count23	-13.60563	.5485312	-24.804	0.000	-14.68283	-12.52844

count24	-16.33692	.6583394	-24.815	0.000	-17.62975	-15.04409
count25	-15.9433	.6435484	-24.774	0.000	-17.20709	-14.67951
count26	-16.46001	.6428325	-25.605	0.000	-17.72239	-15.19763
count27	-14.35511	.5380043	-26.682	0.000	-15.41163	-13.29859
count28	-14.0877	.4522827	-31.148	0.000	-14.97589	-13.19952
count29	-15.02586	.6715824	-22.374	0.000	-16.3447	-13.70702
count30	-16.14958	.6822318	-23.672	0.000	-17.48934	-14.80983
count31	-16.36272	.6268336	-26.104	0.000	-17.59369	-15.13176
count32	-16.84559	.8041748	-20.948	0.000	-18.42481	-15.26637
count33	-13.19523	.4325962	-30.502	0.000	-14.04475	-12.3457
count34	-17.06919	.6228837	-27.403	0.000	-18.29239	-15.84598
count35	-15.21858	.6286257	-24.209	0.000	-16.45306	-13.9841
count36	-11.85018	.296435	-39.976	0.000	-12.43231	-11.26805
count37	-15.49344	.5916196	-26.188	0.000	-16.65525	-14.33163
count38	-16.49424	.6245476	-26.410	0.000	-17.72071	-15.26777
count39	-13.54616	.6824252	-19.850	0.000	-14.88629	-12.20602
count40	-16.56748	.7317822	-22.640	0.000	-18.00454	-15.13042
count41	-13.29904	.4381961	-30.350	0.000	-14.15956	-12.43852
count42	-15.99216	.7336231	-21.799	0.000	-17.43283	-14.55149
count43	-15.14074	.5783444	-26.179	0.000	-16.27648	-14.005
count44	-14.19241	.6018378	-23.582	0.000	-15.37428	-13.01053
count45	-16.69401	.6716621	-24.855	0.000	-18.013	-15.37501
count46	-16.26078	.7292428	-22.298	0.000	-17.69285	-14.82871
count47	-14.79256	.6358727	-23.263	0.000	-16.04128	-13.54385
count48	-14.25433	.653829	-21.801	0.000	-15.53831	-12.97036
count49	-10.23887	.514162	-19.914	0.000	-11.24857	-9.229174
count50	-11.61427	.4978522	-23.329	0.000	-12.59194	-10.6366
count51	-12.32144	.4199098	-29.343	0.000	-13.14605	-11.49683
count52	-12.61143	.8771671	-14.377	0.000	-14.33399	-10.88887
count53	-14.167	.5085989	-27.855	0.000	-15.16577	-13.16822
count54	(dropped)					
count55	-14.29467	.582006	-24.561	0.000	-15.4376	-13.15174
count56	-14.67303	.56248	-26.086	0.000	-15.77762	-13.56845
count57	-14.91332	.588946	-25.322	0.000	-16.06988	-13.75676
count58	-16.21758	.6274917	-25.845	0.000	-17.44983	-14.98532
count59	-14.88787	.5838267	-25.500	0.000	-16.03437	-13.74136
count60	-13.02664	.5190835	-25.095	0.000	-14.046	-12.00727
count61	-13.96392	.9573682	-14.586	0.000	-15.84397	-12.08386
count62	-14.1747	.5268742	-26.903	0.000	-15.20936	-13.14003
count63	-13.48227	.5039414	-26.754	0.000	-14.4719	-12.49264
count64	-12.25533	.7093061	-17.278	0.000	-13.64825	-10.86241
count65	(dropped)					
count66	(dropped)					
count67	-11.19715	.6089264	-18.388	0.000	-12.39295	-10.00135
count68	-13.53046	1.072864	-12.612	0.000	-15.63733	-11.4236
count69	-13.53626	.8884596	-15.236	0.000	-15.28099	-11.79152
count70	-14.56062	.5811886	-25.053	0.000	-15.70195	-13.4193
count71	-16.27339	.7834043	-20.773	0.000	-17.81183	-14.73496
count72	-14.30019	.6181588	-23.134	0.000	-15.51412	-13.08626
count73	-14.85112	.6812488	-21.800	0.000	-16.18894	-13.5133
count74	-14.78825	.6008909	-24.611	0.000	-15.96827	-13.60823
count75	-12.46494	.4483341	-27.803	0.000	-13.34537	-11.58451
count76	-14.74708	.5414715	-27.235	0.000	-15.81041	-13.68375
count77	-14.93998	.6486977	-23.031	0.000	-16.21388	-13.66608

count78	-11.57875	.4068454	-28.460	0.000	-12.37771	-10.7798
count79	-12.8135	.6980413	-18.356	0.000	-14.1843	-11.4427
count80	-12.62244	.8176701	-15.437	0.000	-14.22816	-11.01671
count81	-10.55508	.5552806	-19.009	0.000	-11.64553	-9.464635
count82	-18.96314	.8251504	-22.981	0.000	-20.58355	-17.34273
count83	(dropped)					
count84	-17.46704	1.003874	-17.400	0.000	-19.43843	-15.49566
count85	-13.08356	.7524342	-17.388	0.000	-14.56117	-11.60594
count86	-18.13535	.9649596	-18.794	0.000	-20.03032	-16.24039
count87	-17.30512	.8668211	-19.964	0.000	-19.00737	-15.60288
count88	-14.79275	.6985016	-21.178	0.000	-16.16446	-13.42105
count89	-13.14297	.816362	-16.099	0.000	-14.74612	-11.53981
count90	-12.4013	.719413	-17.238	0.000	-13.81407	-10.98854
count91	-14.15731	1.023825	-13.828	0.000	-16.16787	-12.14674
count92	-13.46473	.5286961	-25.468	0.000	-14.50297	-12.42649
count93	-14.82615	.7202548	-20.585	0.000	-16.24057	-13.41172
count94	-11.36617	.7008211	-16.218	0.000	-12.74243	-9.98991
count95	-14.79577	.6573601	-22.508	0.000	-16.08668	-13.50486
count96	-16.45095	.7515004	-21.891	0.000	-17.92673	-14.97516
count97	-18.06018	.6972081	-25.904	0.000	-19.42935	-16.69102
count98	-11.7495	.6179465	-19.014	0.000	-12.96301	-10.53598
count99	-16.80889	.8097068	-20.759	0.000	-18.39898	-15.2188
count100	-15.69511	.7306156	-21.482	0.000	-17.12988	-14.26034
count101	-10.11831	.5714837	-17.705	0.000	-11.24058	-8.996045
count102	-12.26664	.7936403	-15.456	0.000	-13.82518	-10.70811
count103	-11.74877	.692769	-16.959	0.000	-13.10921	-10.38832
count104	-15.58811	.6537616	-23.844	0.000	-16.87195	-14.30427
count105	-14.35626	.6106135	-23.511	0.000	-15.55537	-13.15715
count106	-14.2696	.6573858	-21.707	0.000	-15.56056	-12.97864
count107	-15.98137	.7290289	-21.921	0.000	-17.41303	-14.54972
count108	-11.19243	.6774551	-16.521	0.000	-12.5228	-9.862055
count109	-15.88796	.6768807	-23.472	0.000	-17.21721	-14.55872
count110	-12.72229	.7879458	-16.146	0.000	-14.26964	-11.17494
count111	-12.23798	.8086442	-15.134	0.000	-13.82597	-10.64998
count112	-13.60063	.6606253	-20.588	0.000	-14.89795	-12.30331
count113	-11.86774	.57613	-20.599	0.000	-12.99913	-10.73635
count114	-12.76943	.656159	-19.461	0.000	-14.05799	-11.48088
count115	-12.23938	.7511035	-16.295	0.000	-13.71438	-10.76438
count116	-12.69112	.7499191	-16.923	0.000	-14.16379	-11.21844
count117	-13.57307	.9537685	-14.231	0.000	-15.44606	-11.70007
count118	-12.19908	.8682943	-14.049	0.000	-13.90422	-10.49394
count119	-13.32266	.9681814	-13.761	0.000	-15.22396	-11.42137
count120	-13.12453	.8071699	-16.260	0.000	-14.70963	-11.53943
count121	-12.41639	.8273723	-15.007	0.000	-14.04116	-10.79161
count122	-10.93874	.483935	-22.604	0.000	-11.88909	-9.988403
count123	-12.03036	.7129059	-16.875	0.000	-13.43035	-10.63038
count124	-14.0921	.9609147	-14.665	0.000	-15.97912	-12.20507
count125	-9.952011	.5262585	-18.911	0.000	-10.98547	-8.918556
count126	-12.27542	.4039884	-30.386	0.000	-13.06876	-11.48208
count127	-12.77745	.8354536	-15.294	0.000	-14.4181	-11.1368
count128	-12.69851	.7334945	-17.312	0.000	-14.13893	-11.25808
count129	-13.93897	.7137073	-19.530	0.000	-15.34053	-12.5374
count130	-13.43172	.8102067	-16.578	0.000	-15.02279	-11.84066
count131	-13.74335	.738459	-18.611	0.000	-15.19352	-12.29318

```
count132 |  -13.84044   .9215372    -15.019   0.000      -15.65014   -12.03075
count133 |  -12.69963   .7921457    -16.032   0.000      -14.25523   -11.14403
count134 |  -13.22392   .7686028    -17.205   0.000      -14.73328   -11.71455
count135 |  -15.34731    .718159    -21.370   0.000      -16.75761     -13.937
count136 |  -13.03699   .9586465    -13.599   0.000      -14.91956   -11.15442
count137 |  -13.80388   1.102517    -12.520   0.000      -15.96898   -11.63878
count138 |  -13.34173   .8857724    -15.062   0.000       -15.0812   -11.60227
count139 |  -12.70337   .8335578    -15.240   0.000       -14.3403   -11.06645
count140 |  -13.32112   .4372542    -30.465   0.000      -14.17979   -12.46245
count141 |  -12.55125   .7023515    -17.870   0.000      -13.93052   -11.17199
count142 |  -14.63816   .5495942    -26.634   0.000      -15.71744   -13.55888
count143 |  -13.38916   .4872297    -27.480   0.000      -14.34598   -12.43235
count144 |  (dropped)
count145 |  -12.38094   .4272369    -28.979   0.000      -13.21994   -11.54194
-------------------------------------------------------------------------------
```

181. predict pla5emis;
(288 missing values generated)

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

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

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

```
                coun       year   pla5emis    la5emis          u    se_emis
  >
 665.          CHINA       1992    6.65804   6.518021   .1400189   .284362
  >
 666.          CHINA       1962          .    5.11556          .          .
  >
 667.          CHINA       1957          .   3.968974          .          .
  >
 668.          CHINA       1972   5.291923   5.294098  -.0021753  .2807566
  >
 669.          CHINA       1977   5.675905   5.733543  -.0576382  .2805877
  >
 670.          CHINA       1987   6.357409   6.274206   .0832024  .2824259
  >
 671.          CHINA       1982   5.989351    6.02307  -.0337195  .2807106
  >
 672.          CHINA       1967   4.855199   4.844869   .0103307  .2822286
  >
```

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

```
                coun       year   pla5emis    la5emis          u    se_emis
  >
 681.          INDIA       1992   5.210373   5.236049  -.0256763  .2776136
  >
 682.          INDIA       1967   3.777738   3.802467  -.0247295  .2740935
  >
```

683.	INDIA	1977	4.25049	4.255882	-.0053926	.2737293
684.	INDIA	1957	3.25749	3.157894	.099596	.2749804
685.	INDIA	1987	4.852165	4.901045	-.0488801	.2756253
686.	INDIA	1982	4.548456	4.575284	-.0268278	.2742217
687.	INDIA	1962	3.525905	3.510835	.01507	.2741842
688.	INDIA	1972	3.990055	3.99889	-.0088358	.2736064

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

	coun	year	pla5emis	la5emis	u	se_emis
481.	MEXICO	1992	4.407832	4.441646	-.033814	.2771636
482.	MEXICO	1982	4.227448	4.248595	-.0211477	.2752949
483.	MEXICO	1972	3.485389	3.374826	.110563	.2736468
484.	MEXICO	1977	3.855278	3.748322	.106956	.2740248
485.	MEXICO	1987	4.219932	4.338542	-.1186109	.2756422
486.	MEXICO	1967	3.112687	3.050069	.0626185	.2738435
487.	MEXICO	1957	2.374827	2.41135	-.0365231	.2765136
488.	MEXICO	1962	2.707112	2.810968	-.1038554	.2750053

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

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

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

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

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

192. gen sumsqerr = sum(sqerr);

193. list sumsqerr if time==43;

sumsqerr

3.	.0689644
10.	.2400735
19.	1.189569
27.	1.374399
35.	1.586768
42.	1.841265
50.	2.081213
58.	3.04391
66.	3.697547
75.	4.005617
82.	4.463561
89.	4.66859
98.	5.277281
105.	5.325601
114.	5.490263
121.	6.203495
131.	7.116247
138.	7.32666
147.	7.500838
153.	7.571208
163.	7.677201
169.	8.479118
178.	9.158085
186.	9.437327
194.	9.784278
203.	9.929139
211.	11.88361
217.	12.55324
225.	12.95087
235.	14.17812
241.	14.67624
249.	16.28953
257.	17.9066
267.	18.59044
273.	18.96239
283.	19.2488
289.	21.07296
299.	21.35558
305.	21.75771
313.	22.05591
323.	22.26009
331.	22.5852
339.	22.58542
345.	22.65656
353.	22.83368
361.	24.23636
372.	25.28437
378.	25.34345
385.	25.40038
394.	26.50678
404.	26.71994
409.	26.95626
417.	27.16164
426.	27.26406

433. 27.26844
441. 27.47409
449. 27.56015
458. 27.66393
465. 27.86156
473. 28.06789
481. 28.7708
489. 28.82502
497. 29.10738
505. 29.39688
520. 29.4252
527. 29.4252
529. 29.4252
537. 29.95262
545. 30.10905
553. 30.19082
561. 30.33559
569. 30.64024
577. 30.88398
585. 31.1775
593. 31.70889
601. 31.86226
609. 32.10183
617. 32.22207
625. 32.43814
633. 32.86475
646. 33.84982
651. 34.32038
657. 36.35615
665. 36.37576
674. 36.38956
681. 36.42727
691. 36.56608
697. 36.69931
706. 36.82822
714. 37.18595
721. 37.36841
730. 37.43868
737. 37.62648
746. 37.69143
755. 37.69911
761. 37.73079
772. 38.09982
778. 38.19684
785. 38.91843
793. 39.26258
805. 39.46071
810. 39.46071
818. 40.02885
825. 41.19163
835. 41.81961
841. 41.86808
849. 42.11746
862. 42.51304

```
  867.  42.51304
  873.  42.71174
  881.  43.13602
  890.   43.4737
  897.  43.55005
  905.  44.23442
  913.  44.41168
  921.   44.4366
  929.  45.38354
  938.  45.71926
  945.   45.7196
  953.  45.87491
  962.  46.56201
  969.    46.744
  977.  47.19891
  985.  47.28905
  993.  48.20774
 1001.  48.58344
 1009.  48.68304
 1017.  48.93304
 1027.  49.09801
 1033.   49.2497
 1042.  49.32743
 1049.  49.51485
 1057.  49.92369
 1065.  50.12745
 1073.  50.17834
 1081.  50.43422
 1090.  50.79787
 1098.  50.82915
 1105.  50.84019
 1115.  50.85445
 1121.  50.96692
 1130.  51.10177
 1142.  52.20238
 1152.  52.20238
 1153.  52.20238

194. 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

.

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 invl5 = invest[_n-5]/100;
(1499 missing values generated)

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

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

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

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

118. generate timesq = time*time;

119. gen trend = time;

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

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

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

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

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

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

126. drop if counindx==101;
```

(43 observations deleted)

127. **drop if counindx==151;**
(43 observations deleted)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

144. **drop if time==22;**

(145 observations deleted)

145. **drop if time==21;**
(145 observations deleted)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

162. **drop if time==1;**

(144 observations deleted)

```
163. set matsize 300;

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

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

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

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

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

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

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

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

172. generate time2sq = time2*time2;

173. 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	

174. **xtreg la5emis lgdpl5 lgdpl6 lpopl5 invl5 devdum3a devdum3b if time<=42, fe i(**
> counindx);

Fixed-effects (within) regression

sd(u_counindx)	=	1.842656	Number of obs = 770
sd(e_counindx_t)	=	.2733863	n = 140
sd(e_counindx_t + u_counindx)	=	1.862826	T-bar = 5.5
corr(u_counindx, Xb)	=	-0.3928	R-sq within = 0.7987
			between = 0.5602
			overall = 0.5723
			F(6, 624) = 412.75
			Prob > F = 0.0000

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	1.064766	.1963152	5.424	0.000	.6792477	1.450285
lgdpl6	-.2034737	.1969763	-1.033	0.302	-.5902904	.183343
lpopl5	.7413655	.1170409	6.334	0.000	.5115237	.9712073
invl5	1.38572	.2453539	5.648	0.000	.9039011	1.86754
devdum3a	-.0390092	.0652381	-0.598	0.550	-.167122	.0891036
devdum3b	-.1473647	.053615	-2.749	0.006	-.2526524	-.042077
_cons	-13.4279	.6284973	-21.365	0.000	-14.66213	-12.19368
counindx	F(139,624) =		28.393	0.000	(140 categories)	

175. **regress la5emis lgdpl5 lgdpl6 lpopl5 invl5 devdum3a devdum3b count* if time<**
> =42, noconstant;

Source	SS	df	MS		
Model	5195.39536	146	35.5848997	Number of obs =	770
				F(146, 624) =	476.12
				Prob > F =	0.0000

esidual	46.6378103	624	.074740081	R-squared	= 0.9911
Total	5242.03317	770	6.80783529	Adj R-squared	= 0.9890
				Root MSE	= .27339

la5emis	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lgdpl5	1.064766	.1963152	5.424	0.000	.6792473	1.450284
lgdpl6	-.2034733	.1969763	-1.033	0.302	-.5902901	.1833434
lpopl5	.7413655	.1170409	6.334	0.000	.5115237	.9712073
invl5	1.38572	.2453539	5.648	0.000	.9039011	1.86754
devdum3a	-.0390092	.0652381	-0.598	0.550	-.1671221	.0891036
devdum3b	-.1473648	.053615	-2.749	0.006	-.2526525	-.042077
count1	-13.8491	.715324	-19.361	0.000	-15.25384	-12.44437
count2	-14.06567	.683461	-20.580	0.000	-15.40783	-12.72351
count3	-15.36529	.6206184	-24.758	0.000	-16.58404	-14.14654
count4	-12.73363	.5240774	-24.297	0.000	-13.7628	-11.70446
count5	-16.093	.6876185	-23.404	0.000	-17.44332	-14.74267
count6	-16.3668	.6464813	-25.317	0.000	-17.63634	-15.09725
count7	-15.17986	.6926176	-21.917	0.000	-16.54	-13.81972
count8	-13.00456	.4551186	-28.574	0.000	-13.89831	-12.11081
count9	-15.27197	.5984426	-25.520	0.000	-16.44718	-14.09677
count10	-15.96687	.6477994	-24.648	0.000	-17.239	-14.69474
count11	-13.70897	.4553375	-30.107	0.000	-14.60315	-12.81479
count12	-13.47517	.5438831	-24.776	0.000	-14.54323	-12.4071
count13	-12.13401	.4540285	-26.725	0.000	-13.02562	-11.2424
count14	-14.27287	.7826663	-18.236	0.000	-15.80985	-12.73589
count15	-16.74752	.8042392	-20.824	0.000	-18.32687	-15.16818
count16	-10.66233	.5983954	-17.818	0.000	-11.83744	-9.487216
count17	-13.62874	.494601	-27.555	0.000	-14.60002	-12.65745
count18	-15.00224	.7034029	-21.328	0.000	-16.38356	-13.62092
count19	-14.5442	.6555254	-22.187	0.000	-15.8315	-13.2569
count20	-13.87898	.5156188	-26.917	0.000	-14.89153	-12.86642
count21	-14.38256	.6544787	-21.976	0.000	-15.66781	-13.09731
count22	-14.94746	.7241716	-20.641	0.000	-16.36957	-13.52535
count23	-13.1226	.5753125	-22.810	0.000	-14.25238	-11.99282
count24	-15.632	.6912361	-22.615	0.000	-16.98943	-14.27457
count25	-15.16774	.6784706	-22.356	0.000	-16.50011	-13.83538
count26	-15.79083	.6803472	-23.210	0.000	-17.12687	-14.45478
count27	-13.71683	.5651779	-24.270	0.000	-14.82671	-12.60695
count28	-13.64665	.4802291	-28.417	0.000	-14.58971	-12.70359
count29	-14.54687	.722166	-20.143	0.000	-15.96504	-13.1287
count30	-15.41864	.7166671	-21.514	0.000	-16.82602	-14.01127
count31	-15.65624	.6598195	-23.728	0.000	-16.95197	-14.3605
count32	-15.82787	.844213	-18.749	0.000	-17.48571	-14.17002
count33	-12.66768	.4629489	-27.363	0.000	-13.5768	-11.75855
count34	-16.34024	.6524439	-25.045	0.000	-17.62149	-15.05899
count35	-14.4776	.657885	-22.006	0.000	-15.76953	-13.18566
count36	-11.4481	.3147019	-36.378	0.000	-12.0661	-10.83009
count37	-14.79091	.6207353	-23.828	0.000	-16.0099	-13.57193
count38	-15.78356	.6546417	-24.110	0.000	-17.06913	-14.49799
count39	-12.91821	.7293538	-17.712	0.000	-14.3505	-11.48592
count40	-15.71947	.7688661	-20.445	0.000	-17.22935	-14.20959
count41	-12.78681	.4614798	-27.708	0.000	-13.69305	-11.88057

count42	-15.13403	.7775055	-19.465	0.000	-16.66087	-13.60719
count43	-14.33902	.6084859	-23.565	0.000	-15.53394	-13.14409
count44	-13.66069	.6448847	-21.183	0.000	-14.92709	-12.39428
count45	-16.0078	.7071826	-22.636	0.000	-17.39655	-14.61905
count46	-15.49208	.76984	-20.124	0.000	-17.00387	-13.98029
count47	-13.97662	.666201	-20.980	0.000	-15.28489	-12.66835
count48	-13.35937	.6821025	-19.586	0.000	-14.69886	-12.01987
count49	-10.18435	.5572531	-18.276	0.000	-11.27867	-9.090028
count50	-10.96042	.5146279	-21.298	0.000	-11.97103	-9.949809
count51	-12.00265	.4442126	-27.020	0.000	-12.87498	-11.13031
count52	-11.48363	.9067894	-12.664	0.000	-13.26436	-9.702899
count53	-13.60163	.5402716	-25.176	0.000	-14.6626	-12.54066
count54	(dropped)					
count55	-13.79487	.6236519	-22.120	0.000	-15.01958	-12.57016
count56	-14.25319	.6030544	-23.635	0.000	-15.43745	-13.06893
count57	-14.44079	.6288998	-22.962	0.000	-15.67581	-13.20578
count58	-15.50038	.6602183	-23.478	0.000	-16.79689	-14.20386
count59	-14.06048	.6074106	-23.148	0.000	-15.25329	-12.86766
count60	-12.54931	.5588592	-22.455	0.000	-13.64678	-11.45183
count61	-12.89386	.9951618	-12.957	0.000	-14.84813	-10.93959
count62	-13.74655	.5643462	-24.358	0.000	-14.85479	-12.6383
count63	-12.91505	.5370525	-24.048	0.000	-13.9697	-11.8604
count64	-11.32206	.7336895	-15.432	0.000	-12.76286	-9.881257
count65	(dropped)					
count66	(dropped)					
count67	-10.38365	.6242589	-16.634	0.000	-11.60955	-9.157743
count68	-12.2894	1.115769	-11.014	0.000	-14.48052	-10.09828
count69	-12.55096	.9243718	-13.578	0.000	-14.36622	-10.73571
count70	-14.09819	.6232937	-22.619	0.000	-15.3222	-12.87418
count71	-15.60628	.8411509	-18.553	0.000	-17.25811	-13.95445
count72	-13.74678	.6614075	-20.784	0.000	-15.04563	-12.44792
count73	-14.26115	.7296138	-19.546	0.000	-15.69395	-12.82836
count74	-14.17024	.6427295	-22.047	0.000	-15.43242	-12.90807
count75	-11.94945	.4749597	-25.159	0.000	-12.88217	-11.01674
count76	-14.27607	.5785868	-24.674	0.000	-15.41228	-13.13985
count77	-14.39742	.6935234	-20.760	0.000	-15.75935	-13.0355
count78	-11.14657	.4337129	-25.700	0.000	-11.99828	-10.29486
count79	-12.05959	.7264432	-16.601	0.000	-13.48616	-10.63302
count80	-11.61809	.8428428	-13.784	0.000	-13.27324	-9.962941
count81	-9.490898	.5592795	-16.970	0.000	-10.5892	-8.3926
count82	-17.99377	.8652381	-20.796	0.000	-19.6929	-16.29464
count83	(dropped)					
count84	-16.12944	1.056681	-15.264	0.000	-18.20452	-14.05436
count85	-12.06022	.7735117	-15.592	0.000	-13.57922	-10.54122
count86	-16.98737	1.017437	-16.696	0.000	-18.98538	-14.98935
count87	-16.1423	.910261	-17.734	0.000	-17.92985	-14.35476
count88	-14.16031	.7478025	-18.936	0.000	-15.62883	-12.6918
count89	-12.1458	.8428209	-14.411	0.000	-13.80091	-10.49069
count90	-11.35861	.7381221	-15.389	0.000	-12.80811	-9.909104
count91	-12.9018	1.068089	-12.079	0.000	-14.99928	-10.80432
count92	-12.93049	.5640853	-22.923	0.000	-14.03823	-11.82275
count93	-14.10767	.7743709	-18.218	0.000	-15.62836	-12.58698
count94	-10.46004	.7124366	-14.682	0.000	-11.8591	-9.060974
count95	-14.0752	.7037803	-19.999	0.000	-15.45727	-12.69314

count96	-15.64041	.7983634	-19.591	0.000	-17.20821	-14.0726
count97	-17.24865	.7358996	-23.439	0.000	-18.69379	-15.80351
count98	-10.50225	.6335411	-16.577	0.000	-11.74638	-9.258114
count99	-15.79468	.8495367	-18.592	0.000	-17.46297	-14.12638
count100	-15.15053	.7865316	-19.262	0.000	-16.6951	-13.60596
count101	-9.387823	.5711339	-16.437	0.000	-10.5094	-8.266246
count102	-11.21648	.8101016	-13.846	0.000	-12.80733	-9.625622
count103	-10.66835	.7135864	-14.950	0.000	-12.06967	-9.267031
count104	-15.14502	.7049615	-21.483	0.000	-16.52941	-13.76064
count105	-13.77819	.6520885	-21.129	0.000	-15.05874	-12.49764
count106	-13.58361	.7040142	-19.295	0.000	-14.96613	-12.20109
count107	-15.38247	.7841383	-19.617	0.000	-16.92234	-13.8426
count108	-10.23248	.6876873	-14.880	0.000	-11.58294	-8.882016
count109	-14.90737	.7048318	-21.150	0.000	-16.2915	-13.52324
count110	-11.7229	.8191146	-14.312	0.000	-13.33145	-10.11434
count111	-11.24034	.8410555	-13.365	0.000	-12.89198	-9.588698
count112	-12.86932	.7060436	-18.227	0.000	-14.25583	-11.48281
count113	-11.08207	.599166	-18.496	0.000	-12.2587	-9.905445
count114	-12.14602	.7071112	-17.177	0.000	-13.53463	-10.75741
count115	-11.24372	.7784001	-14.445	0.000	-12.77232	-9.715119
count116	-11.62804	.7767112	-14.971	0.000	-13.15333	-10.10276
count117	-12.42658	.9933545	-12.510	0.000	-14.3773	-10.47585
count118	-11.10509	.9056954	-12.261	0.000	-12.88367	-9.326512
count119	-12.13631	1.008843	-12.030	0.000	-14.11744	-10.15517
count120	-12.1458	.8424241	-14.418	0.000	-13.80013	-10.49147
count121	-11.43364	.8652373	-13.214	0.000	-13.13277	-9.734511
count122	-10.06696	.4890858	-20.583	0.000	-11.02742	-9.106511
count123	-11.12774	.7422876	-14.991	0.000	-12.58542	-9.670052
count124	-12.93406	1.002585	-12.901	0.000	-14.90291	-10.96521
count125	-9.073973	.5376968	-16.876	0.000	-10.12989	-8.018058
count126	-11.77598	.4329943	-27.197	0.000	-12.62629	-10.92568
count127	-11.70335	.8658752	-13.516	0.000	-13.40373	-10.00297
count128	-11.66547	.7588374	-15.373	0.000	-13.15565	-10.17528
count129	-13.24885	.7683028	-17.244	0.000	-14.75762	-11.74007
count130	-12.52938	.8486829	-14.763	0.000	-14.196	-10.86276
count131	-12.6249	.777205	-16.244	0.000	-14.15115	-11.09865
count132	-12.76885	.9619212	-13.274	0.000	-14.65784	-10.87985
count133	-11.68004	.8211895	-14.223	0.000	-13.29267	-10.06741
count134	-12.15216	.7929025	-15.326	0.000	-13.70924	-10.59508
count135	-14.72088	.7713964	-19.083	0.000	-16.23573	-13.20604
count136	-11.96888	1.000573	-11.962	0.000	-13.93377	-10.00398
count137	-12.4938	1.15405	-10.826	0.000	-14.7601	-10.22751
count138	-12.24843	.9250948	-13.240	0.000	-14.0651	-10.43175
count139	-11.52975	.8588453	-13.425	0.000	-13.21632	-9.84317
count140	-12.80441	.4641074	-27.589	0.000	-13.71581	-11.893
count141	-11.55656	.7222299	-16.001	0.000	-12.97486	-10.13827
count142	-14.13606	.5886914	-24.013	0.000	-15.29211	-12.98
count143	-12.55678	.5024777	-24.990	0.000	-13.54353	-11.57003
count144	(dropped)					
count145	-12.02384	.4558562	-26.376	0.000	-12.91904	-11.12864

176. **predict pla5emis;**
(237 missing values generated)

177. **predict se_emis, stdf;**
(237 missing values generated)

178. **generate u = pla5emis-la5emis;**
(259 missing values generated)

179. **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	6.677744	6.518021	.1597233	.3041891
667.	CHINA	1957	.	3.968974	.	.
668.	CHINA	1982	6.006622	6.02307	-.016448	.3000901
669.	CHINA	1987	6.289483	6.274206	.0152764	.301139
670.	CHINA	1972	5.317445	5.294098	.0233469	.2998535
671.	CHINA	1977	5.771529	5.733543	.0379853	.2996067
672.	CHINA	1967	4.784708	4.844869	-.0601606	.3020672

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

	coun	year	pla5emis	la5emis	u	se_emis
681.	INDIA	1992	5.095059	5.236049	-.1409898	.2956879
682.	INDIA	1962	3.573157	3.510835	.0623221	.2928577
683.	INDIA	1977	4.233808	4.255882	-.0220747	.2925332
684.	INDIA	1967	3.81454	3.802467	.0120726	.2924447
685.	INDIA	1972	3.983543	3.99889	-.0153472	.2925768
686.	INDIA	1982	4.52374	4.575284	-.0515437	.2929703
687.	INDIA	1957	3.290559	3.157894	.1326656	.2937436
688.	INDIA	1987	4.78295	4.901045	-.1180949	.2938011

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

	coun	year	pla5emis	la5emis	u	se_emis
481.	MEXICO	1992	4.362482	4.441646	-.0791645	.2958584

```
 >
482.            MEXICO      1972   3.474117   3.374826   .0992911   .2923578
 >
483.            MEXICO      1982   4.059832   4.248595  -.1887631   .2934489
 >
484.            MEXICO      1977   3.775684   3.748322   .0273621    .292783
 >
485.            MEXICO      1987   4.352084   4.338542   .0135417   .2949765
 >
486.            MEXICO      1967   3.055622   3.050069   .0055528   .2926074
 >
487.            MEXICO      1957   2.446544    2.41135   .0351939   .2952272
 >
488.            MEXICO      1962   2.818789   2.810968   .0078218   .2934729
 >
```

```
182. gen err = (pla5emis - la5emis);
(259 missing values generated)

183. gen p5emis = exp(pla5emis);
(237 missing values generated)

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

185. gen err2 = (p5emis - a5emis)/a5emis;
(259 missing values generated)

186. gen sqerr = (pla5emis - la5emis)*(pla5emis - la5emis);
(259 missing values generated)

187. gen sumsqerr = sum(sqerr);

188. list sumsqerr if time==43;

       sumsqerr
   3.  .0087593
  11.  .3056083
  19.  1.158352
  27.  1.469808
  34.  1.814888
  42.  2.202486
  50.  2.896505
  57.  4.539124
  67.  5.226629
  74.  5.658272
  82.  6.090285
  89.  6.251557
  97.  6.921449
 105.  6.967936
 113.  7.088076
 121.  7.825148
 129.   9.83329
 138.  9.986242
```

145. 10.11371
155. 10.25917
163. 10.30927
169. 11.06782
178. 11.66889
185. 12.82056
194. 13.13512
203. 13.41713
210. 15.35917
217. 16.21825
225. 16.63338
234. 17.6891
242. 18.8176
249. 20.35187
259. 22.46147
265. 22.85992
275. 23.31583
281. 23.99123
290. 25.68629
298. 26.63063
305. 27.11512
313. 27.59932
321. 28.54794
330. 29.05958
339. 29.0629
345. 29.10963
353. 29.20131
361. 31.49396
370. 32.79912
377. 32.96758
391. 33.09995
394. 33.22055
404. 33.49229
409. 33.6832
417. 33.83598
426. 33.94146
433. 33.94776
441. 34.39427
449. 34.60069
458. 34.81176
465. 35.0449
474. 35.22278
481. 35.82251
489. 35.89603
497. 36.55448
506. 37.24583
513. 37.43923
524. 37.43923
529. 37.55587
537. 38.16255
545. 38.26612
553. 38.34293
561. 38.69959
569. 38.90363

577.	39.19239
585.	39.45475
593.	40.12104
601.	40.25676
609.	40.76678
617.	41.02461
625.	41.23741
633.	41.847
642.	42.99166
650.	43.4951
664.	45.63529
666.	45.6608
673.	45.66973
681.	45.70789
690.	45.79936
698.	45.92682
706.	46.26455
713.	46.62574
721.	46.8334
730.	46.99171
738.	47.29055
751.	47.61815
754.	47.64477
761.	48.08778
770.	48.35963
779.	48.55781
785.	48.78043
793.	49.00142
801.	49.54669
811.	49.55512
819.	50.25681
825.	51.83216
835.	52.29405
841.	52.39929
849.	52.77747
858.	53.78966
868.	53.8387
873.	53.96901
881.	54.24406
895.	54.71004
897.	54.89711
905.	55.49469
913.	55.67797
921.	55.70784
929.	56.69184
939.	57.023
945.	57.03185
953.	57.64462
965.	58.4362
969.	58.73793
977.	59.37894
985.	59.48742
993.	60.14584
1001.	60.64428

```
1009.  60.82861
1017.  61.02497
1025.  61.22445
1033.  61.53338
1042.  61.95232
1049.  62.15598
1057.  62.51933
1065.  62.73024
1073.  62.77948
1081.  63.10299
1090.  63.43901
1099.   63.4688
1105.  63.50223
1114.   63.6219
1121.  63.87016
1129.  63.98732
1138.  64.78378
1152.  64.78378
1156.   64.7879
```

```
189. 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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702 University Drive East
College Station, Texas 77840
409-696-4600, fax 409-696-4601

(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;**

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)

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*lgdp15;
(1501 missing values generated)

109. gen ausdum = counindx<=152;

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

111. gen ausdum2 = ausdum*lgdp15;
(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*lgdp15);
(1501 missing values generated)

115. gen devdum3a = (devduma*lgdp15);
(1501 missing values generated)

116. gen devdum3b = (devdumb*lgdp15);
(1501 missing values generated)

117. generate timesq = time*time;

118. gen trend = time;

119. gen trend2 = (trend*lgdp15);
(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 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	-.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
time2	(dropped)					
_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 time2 count* if time<=42, noco
> nstant;

```
  Source |       SS       df       MS              Number of obs =     767
---------+------------------------------           F(145,    622) =  498.33
   Model |  5191.55248   145  35.8038102           Prob > F      =  0.0000
esidual  |  44.6891361   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
time	-5.563499	.5123676	-10.858	0.000	-6.569679	-4.557319
time2	27.81296	2.548383	10.914	0.000	22.80848	32.81744
count1	2.113979	.4933044	4.285	0.000	1.145235	3.082723
count2	2.34815	.5943797	3.951	0.000	1.180915	3.515384
count3	1.063147	.6843165	1.554	0.121	-.2807035	2.406998
count4	3.590772	.8448618	4.250	0.000	1.931645	5.249899
count5	.2283569	.6159111	0.371	0.711	-.9811602	1.437874
count6	-.0079077	.6698678	-0.012	0.991	-1.323384	1.307569
count7	1.157884	.5839587	1.983	0.048	.0111148	2.304653
count8	3.383662	.9743988	3.473	0.001	1.470152	5.297172
count9	1.159378	.7309554	1.586	0.113	-.2760617	2.594817
count10	.4462544	.6561545	0.680	0.497	-.8422921	1.734801
count11	2.717151	.9626611	2.823	0.005	.8266916	4.607611
count12	2.72878	.7678136	3.554	0.000	1.220959	4.236601
count13	4.395751	.9731295	4.517	0.000	2.484734	6.306768
count14	1.692213	.400046	4.230	0.000	.9066086	2.477817
count15	-.4970877	.4387768	-1.133	0.258	-1.358751	.3645757
count16	4.443351	.8510099	5.221	0.000	2.772151	6.114552
count17	2.839281	.8869463	3.201	0.001	1.097509	4.581053
count18	1.399219	.5521674	2.534	0.012	.3148808	2.483557
count19	1.857674	.6458256	2.876	0.004	.5894116	3.125937
count20	2.561181	.8695376	2.945	0.003	.8535955	4.268766
count21	1.682349	.5935487	2.834	0.005	.5167467	2.847951
count22	1.397372	.5241656	2.666	0.008	.368023	2.42672
count23	3.610197	.7658421	4.714	0.000	2.106248	5.114146
count24	.8020406	.5774839	1.389	0.165	-.3320137	1.936095
count25	1.180013	.6376377	1.851	0.065	-.0721702	2.432197
count26	.5549091	.6201373	0.895	0.371	-.6629074	1.772726
count27	2.698592	.7805012	3.458	0.001	1.165855	4.231328
count28	2.59332	.8072774	3.212	0.001	1.008	4.178639
count29	1.467146	.4830692	3.037	0.002	.5185018	2.41579
count30	1.013508	.5377585	1.885	0.060	-.0425339	2.069551
count31	.7429888	.6392392	1.162	0.246	-.5123397	1.998317
count32	.46657	.3450375	1.352	0.177	-.2110095	1.144149
count33	3.577664	.8912587	4.014	0.000	1.827423	5.327905
count34	.0449013	.6521289	0.069	0.945	-1.23574	1.325542
count35	1.966801	.627013	3.137	0.002	.7354825	3.19812
count36	4.896257	1.137547	4.304	0.000	2.662359	7.130156
count37	1.676201	.6829811	2.454	0.014	.3349733	3.017429
count38	.6079733	.6399797	0.950	0.342	-.6488093	1.864756
count39	3.057801	.4355463	7.021	0.000	2.202482	3.913121
count40	.5786159	.5050112	1.146	0.252	-.4131176	1.570349
count41	3.448025	.8874543	3.885	0.000	1.705255	5.190794
count42	1.085958	.579252	1.875	0.061	-.0515681	2.223485
count43	1.998757	.7302572	2.737	0.006	.5646886	3.432825
count44	2.406607	.6066506	3.967	0.000	1.215275	3.597938

count45	.3773322	.5462156	0.691	0.490	-.6953179	1.449982
count46	.8426626	.461087	1.828	0.068	-.0628131	1.748138
count47	2.497217	.6354137	3.930	0.000	1.249401	3.745033
count48	3.085987	.6080218	5.075	0.000	1.891963	4.280011
count49	5.069779	1.007277	5.033	0.000	3.091704	7.047854
count50	4.337989	.9494514	4.569	0.000	2.47347	6.202507
count51	4.283268	1.060938	4.037	0.000	2.199813	6.366723
count52	2.716216	.4451611	6.102	0.000	1.842015	3.590416
count53	2.545	.7287268	3.492	0.001	1.113937	3.976062
count54	(dropped)					
count55	2.270407	.6238789	3.639	0.000	1.045243	3.495572
count56	1.87133	.6479744	2.888	0.004	.598848	3.143813
count57	1.651719	.6006506	2.750	0.006	.4721701	2.831267
count58	.9074089	.6277919	1.445	0.149	-.3254396	2.140257
count59	2.370246	.6850407	3.460	0.001	1.024973	3.715519
count60	3.620924	.7171082	5.049	0.000	2.212678	5.029171
count61	1.263546	.3519935	3.590	0.000	.5723066	1.954786
count62	2.393765	.702709	3.406	0.001	1.013796	3.773735
count63	3.212494	.7434123	4.321	0.000	1.752592	4.672396
count64	3.423451	.6666354	5.135	0.000	2.114322	4.732579
count65	(dropped)					
count66	(dropped)					
count67	4.591347	.7838919	5.857	0.000	3.051952	6.130742
count68	1.403295	.258199	5.435	0.000	.8962482	1.910343
count69	1.723954	.4257295	4.049	0.000	.8879127	2.559995
count70	1.985586	.6239562	3.182	0.002	.7602701	3.210902
count71	.2597918	.2907909	0.893	0.372	-.3112591	.8308427
count72	2.267922	.5308957	4.272	0.000	1.225357	3.310487
count73	1.715998	.44762	3.834	0.000	.8369688	2.595028
count74	1.850373	.5866487	3.154	0.002	.6983207	3.002425
count75	4.214332	.8476983	4.972	0.000	2.549635	5.87903
count76	1.832093	.6924536	2.646	0.008	.4722631	3.191923
count77	1.610769	.4948315	3.255	0.001	.6390262	2.582512
count78	5.13482	.9139531	5.618	0.000	3.340012	6.929627
count79	2.731167	.6622077	4.124	0.000	1.430734	4.031601
count80	2.819692	.5209129	5.413	0.000	1.796731	3.842653
count81	5.595679	.9428707	5.935	0.000	3.744084	7.447275
count82	-1.636092	.329989	-4.958	0.000	-2.28412	-.9880645
count83	(dropped)					
count84	(dropped)					
count85	2.586901	.6274442	4.123	0.000	1.354735	3.819067
count86	-.7814688	.1635019	-4.780	0.000	-1.102551	-.4603862
count87	.0602102	.2788668	0.216	0.829	-.4874242	.6078445
count88	1.794674	.409516	4.382	0.000	.9904726	2.598875
count89	2.362477	.5291589	4.465	0.000	1.323322	3.401631
count90	3.356544	.662382	5.067	0.000	2.055768	4.65732
count91	.949746	.2856718	3.325	0.001	.3887479	1.510744
count92	3.191748	.7161649	4.457	0.000	1.785354	4.598142
count93	1.752926	.4065288	4.312	0.000	.9545909	2.551261
count94	4.437298	.7944135	5.586	0.000	2.87724	5.997355
count95	1.887885	.5274485	3.579	0.000	.8520889	2.92368
count96	.6383731	.4360484	1.464	0.144	-.2179323	1.494678
count97	-.9220994	.5278477	-1.747	0.081	-1.958679	.11448
count98	4.372463	.8225115	5.316	0.000	2.757227	5.987699

count99	.5002941	.3361723	1.488	0.137	-.1598761	1.160464
count100	.7615737	.386863	1.969	0.049	.0018579	1.52129
count101	5.940585	.979243	6.067	0.000	4.017563	7.863608
count102	3.266938	.5717257	5.714	0.000	2.144192	4.389685
count103	4.043435	.7150768	5.655	0.000	2.639178	5.447692
count104	.8645985	.5065866	1.707	0.088	-.1302288	1.859426
count105	2.300688	.5749206	4.002	0.000	1.171668	3.429709
count106	2.374544	.491928	4.827	0.000	1.408503	3.340585
count107	.5192867	.3924491	1.323	0.186	-.251399	1.289972
count108	4.682526	.8230691	5.689	0.000	3.066195	6.298857
count109	1.461977	.5945756	2.459	0.014	.2943584	2.629596
count110	2.728105	.5505036	4.956	0.000	1.647034	3.809175
count111	3.158633	.5222413	6.048	0.000	2.133063	4.184203
count112	3.222146	.6218834	5.181	0.000	2.000901	4.443391
count113	3.985702	.8420915	4.733	0.000	2.332015	5.639388
count114	3.800352	.4949685	7.678	0.000	2.82834	4.772363
count115	3.266233	.5965398	5.475	0.000	2.094757	4.437709
count116	2.898051	.6066498	4.777	0.000	1.706721	4.08938
count117	1.580398	.3548319	4.454	0.000	.8835844	2.277212
count118	3.171542	.497551	6.374	0.000	2.194458	4.148625
count119	1.84678	.3397154	5.436	0.000	1.179652	2.513908
count120	2.352683	.5328701	4.415	0.000	1.30624	3.399125
count121	2.979404	.5468976	5.448	0.000	1.905415	4.053394
count122	5.162429	.9641023	5.355	0.000	3.269139	7.055718
count123	3.567024	.6488621	5.497	0.000	2.292798	4.84125
count124	1.088199	.3467105	3.139	0.002	.4073346	1.769064
count125	6.012722	.8989873	6.688	0.000	4.247304	7.77814
count126	4.455457	.9172417	4.857	0.000	2.654192	6.256723
count127	2.617038	.4931237	5.307	0.000	1.648649	3.585427
count128	2.893861	.6261131	4.622	0.000	1.664309	4.123413
count129	2.723293	.4237693	6.426	0.000	1.891101	3.555485
count130	1.976934	.5297191	3.732	0.000	.9366798	3.017189
count131	3.63916	.4692696	7.755	0.000	2.717616	4.560705
count132	1.381629	.3901387	3.541	0.000	.6154807	2.147778
count133	2.734293	.5426623	5.039	0.000	1.668621	3.799965
count134	2.255293	.577347	3.906	0.000	1.121508	3.389079
count135	1.171176	.3905812	2.999	0.003	.4041586	1.938194
count136	2.055788	.3433056	5.988	0.000	1.38161	2.729967
count137	1.192896	.2354528	5.066	0.000	.730517	1.655274
count138	2.026434	.4562138	4.442	0.000	1.130529	2.92234
count139	2.771534	.5008056	5.534	0.000	1.78806	3.755009
count140	3.439035	.8652227	3.975	0.000	1.739923	5.138146
count141	3.100345	.6625727	4.679	0.000	1.799195	4.401496
count142	1.966467	.6915614	2.844	0.005	.6083886	3.324545
count143	3.874548	1.019473	3.801	0.000	1.872521	5.876575
count144	(dropped)					
count145	4.271444	1.071229	3.987	0.000	2.167781	6.375107

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

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	1987	4.73937	4.901045	-.161675	.2872927
683.	INDIA	1972	3.959838	3.99889	-.039052	.2867701
684.	INDIA	1977	4.234917	4.255882	-.0209651	.286768
685.	INDIA	1982	4.516047	4.575284	-.0592365	.2870614
686.	INDIA	1957	3.336003	3.157894	.1781089	.287402
687.	INDIA	1962	3.56562	3.510835	.0547857	.2870766
688.	INDIA	1967	3.850501	3.802467	.0480337	.2867501

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	1962	2.690516	2.810968	-.1204512	.2871356

483.	MEXICO	1972	3.479191	3.374826	.1043651	.2866323
484.	MEXICO	1987	4.400739	4.338542	.0621963	.2880754
485.	MEXICO	1977	3.849259	3.748322	.1009364	.2868175
486.	MEXICO	1957	2.350728	2.41135	-.0606217	.2877161
487.	MEXICO	1982	4.159761	4.248595	-.0888343	.2870426
488.	MEXICO	1967	3.052479	3.050069	.0024097	.2867299

```
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
 19.  1.09956
 27. 1.271599
 35. 1.394553
 42. 1.861521
 49. 2.179241
 59. 3.674781
 67. 4.031806
 73. 4.506284
 82. 4.924731
 91. 5.094386
100. 5.757044
105. 5.769032
113. 5.899064
121.  6.69351
130. 7.764256
137. 7.907327
147. 8.012939
153. 8.117802
161. 8.175197
```

169. 8.778386
177. 9.301862
185. 9.485755
196. 9.798563
202. 9.894072
209. 12.29862
217. 13.01105
225. 13.37202
233. 14.52979
242. 15.22436
249. 16.84259
257. 18.88071
266. 19.47573
275. 19.91117
282. 20.29139
290. 22.40787
298. 22.78704
305. 23.174
317. 23.40573
323. 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
393. 27.99149
406. 28.23156
409. 28.51882
417. 28.79686
427. 28.90888
433. 28.9118
441. 29.20704
449. 29.37106
458. 29.55247
465. 29.81482
473. 29.95953
481. 30.56356
489. 30.61459
497. 31.26688
506. 31.52854
516. 31.61447
522. 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
643. 37.43371
651. 38.0458
661. 40.14307
667. 40.1506
673. 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
745. 42.36178
755. 42.36208
761. 42.38814
771. 42.62575
780. 42.74661
785. 42.87448
793. 43.05838
806. 43.33226
809. 43.33226
818. 43.88102
825. 45.23083
834. 45.68581
841. 45.79189
849. 45.96038
860. 46.77076
865. 46.77076
873. 46.95609
881. 47.39138
891. 47.8307
897. 47.95459
907. 48.56152
913. 48.66781
921. 48.70673
929. 49.67107
937. 50.0753
945. 50.07644
953. 50.34098
961. 51.05951
969. 51.38621
977. 52.14845
985. 52.21176
993. 53.12721
1002. 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
1090.  56.06545
1097.  56.11429
1105.  56.17398
1113.  56.28242
1121.  56.43919
1130.  56.62209
1143.  57.49413
1148.  57.49413
1155.  57.49413
```

```
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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