Supplementary materials for John Bartle, Sebastian Avallaneda-Dellepiane and Anthony McGann, Policy accommodation versus electoral turnover: Policy representation in Britain, 1945-2015, Journal of Public Policy

Materials 1-3 are the output produced by the wcalc algorithm to estimate the policy mood (1945-2015), annual Labour vote intentions (1943-2015) and evaluations of Labour competence (1951-2015). Materials 4-6 are the output produced using the R statistical programme for tables 3-5.

1. **Estimation of the annual policy mood using wcalc**

Estimation Report for File: C:\Users\jbartl\Desktop\leftright.txt

 2099 records after date scan

Period: 1945 to 2015 71 Time Points

Number of Series: 288

Exponential Smoothing: Off

Iteration History: Dimension 1

Iter Convergence Criterion Items Reliability AlphaF AlphaB

 1 .5183 .001 288 .688 1.000 1.000

 2 .0446 .001 288 .731 1.000 1.000

 3 .0205 .001 288 .760 1.000 1.000

 4 .0074 .001 288 .763 1.000 1.000

 5 .0051 .001 288 .765 1.000 1.000

 6 .0032 .001 288 .766 1.000 1.000

 7 .0019 .001 288 .766 1.000 1.000

 8 .0012 .001 288 .767 1.000 1.000

 9 .0007 .001 288 .767 1.000 1.000

Loadings and descriptive variable information

 Dim 1 Dim 2

 Variable Cases Loading Loading Mean Std Deviation

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 1 COMPINSPAY 6 -.232 .000 66.818 1.970

 2 COMPOWERS 3 .109 .000 57.608 2.382

 3 CONTROLPRICE 3 .905 .000 77.923 4.458

 4 CONTROLS 3 .989 .000 70.313 2.052

 5 CORPORATISM 2 -1.000 .000 91.026 .438

 6 ECOHELP2 8 -.845 .000 63.446 5.046

 7 ECOHELP4 5 .135 .000 73.496 1.335

 8 ECOHELP5 8 -.565 .000 63.802 3.339

 9 ECOHELP6 5 -.810 .000 14.555 2.214

 10 ECOHELP8 8 .735 .000 68.116 4.156

 11 ECOHELP9 8 -.539 .000 90.152 2.622

 12 ECOHELPA 3 .430 .000 90.862 2.188

 13 ECOHELPB 3 -.060 .000 83.543 1.057

 14 ECOHELPC 3 -.654 .000 71.870 2.187

 15 EXPENSES 3 .931 .000 80.032 4.237

 16 FLUORIDE 4 .901 .000 68.557 5.178

 17 GOVECON4 4 .805 .000 94.389 1.763

 18 GOVECON5 4 .663 .000 21.952 3.243

 19 GOVECON6 4 .896 .000 98.191 .282

 20 GOVECON7 4 .249 .000 74.391 7.138

 21 GOVECON8 4 .489 .000 56.072 6.502

 22 GOVHELP4 3 .426 .000 40.082 1.055

 23 GOVINVEST 5 .240 .000 47.448 9.357

 24 GOVJOB 3 .107 .000 59.522 7.276

 25 GOVJOBS 3 .718 .000 86.882 5.115

 26 GOVJOBS2 7 .410 .000 57.378 2.934

 27 GOVRESP1 14 .361 .000 69.321 6.204

 28 GOVRESP2 8 -.031 .000 90.937 4.333

 29 GOVRESP3 8 -.241 .000 99.038 .327

 30 GOVRESP4 9 .101 .000 98.031 .739

 31 GOVRESP5 6 .287 .000 92.668 3.029

 32 GOVRESP6 7 .730 .000 76.619 11.254

 33 GOVRESP8 4 .156 .000 91.003 1.598

 34 GOVRESP9 2 -1.000 .000 90.981 1.997

 35 HEALTHFREE 6 -.802 .000 87.085 1.247

 36 IDEALSOCIETY1 5 .968 .000 52.952 3.919

 37 IDEALSOCIETY2 4 .985 .000 51.746 4.248

 38 IDEALSOCIETY3 2 -1.000 .000 67.498 2.605

 39 INDRESP 2 1.000 .000 35.546 8.428

 40 JOBFRALL 2 -1.000 .000 69.937 1.855

 41 NEWTECH 3 .274 .000 91.862 1.529

 42 PENWHOSH 3 -.735 .000 85.060 1.192

 43 RESTRICTPROFS 3 .928 .000 69.130 4.940

 44 RETRESP 7 .666 .000 58.452 2.773

 45 SAMEPENS 5 -.341 .000 35.467 1.795

 46 SAVFRRET 4 .868 .000 13.848 3.128

 47 SOCPLAN 6 .870 .000 55.780 4.393

 48 STOPWAGES 3 .939 .000 40.353 7.493

 49 UNFAIR 6 .359 .000 75.879 1.643

 50 BIGBUSNN 27 .121 .000 75.910 3.244

 51 BIGBUSTH 2 -1.000 .000 61.298 .993

 52 BLAME 7 .549 .000 17.122 5.384

 53 BUSPOWER 11 .570 .000 69.392 7.456

 54 CLASSSTR 14 .868 .000 74.140 8.834

 55 CONFLIC1 4 .960 .000 50.890 7.218

 56 CONFLIC2 4 .244 .000 23.450 2.328

 57 CONFLIC3 2 1.000 .000 43.335 2.898

 58 CONFLIC4 4 .855 .000 48.987 5.086

 59 INDUST4 28 .483 .000 75.443 3.796

 60 INDUST5 2 -1.000 .000 61.371 1.164

 61 NOTRUDS2 7 -.664 .000 75.686 6.364

 62 NOTRUNS 5 -.867 .000 80.118 2.296

 63 NOTRUNS2 7 .804 .000 27.493 5.978

 64 PAYDISP 3 -.836 .000 54.083 1.776

 65 PICKET 2 1.000 .000 28.288 2.481

 66 POWERIND 7 .419 .000 86.800 6.415

 67 STRIKES1 5 .905 .000 47.903 2.957

 68 STRIKES2 4 .537 .000 58.365 2.254

 69 STRIKES3 4 .792 .000 21.556 3.076

 70 STRIKES4 4 -.894 .000 20.241 .871

 71 STRIKES5 2 -1.000 .000 26.603 1.603

 72 STRIKLIM 4 .893 .000 40.989 5.402

 73 STRONGTU 5 -.843 .000 71.518 2.789

 74 TUBETTER 5 .442 .000 71.260 1.475

 75 TUCNTRL 3 .675 .000 14.248 1.565

 76 TUCOMP 4 .835 .000 28.241 4.237

 77 TUCOMP2 11 .657 .000 28.532 4.759

 78 TUCOMP3 4 .594 .000 33.221 3.113

 79 TUEFFIC 4 .806 .000 6.538 1.499

 80 TUESSEN 18 .678 .000 83.603 3.032

 81 TUEXTREM 15 .705 .000 38.728 16.123

 82 TUFAIR 5 .988 .000 76.347 3.159

 83 TUGOOD 40 .956 .000 72.134 7.037

 84 TUJOIN 9 .792 .000 48.681 4.748

 85 TULAWS 5 .586 .000 44.731 6.722

 86 TULDRS 5 .760 .000 20.179 3.475

 87 TUNEEDED 5 .847 .000 73.872 2.481

 88 TUPOWER 9 .479 .000 45.559 21.770

 89 TUPOWER1 10 -.150 .000 40.294 18.125

 90 TUPOWER2 18 .829 .000 42.072 21.748

 91 TUPOWER3 24 .914 .000 28.718 20.322

 92 TUPOWER4 2 1.000 .000 10.072 .072

 93 TUPOWER5 2 1.000 .000 20.567 3.901

 94 TUPRISON 3 -.601 .000 37.158 3.282

 95 TUPROFIT 3 -.980 .000 72.343 2.836

 96 TUREFOR1 5 .034 .000 22.699 1.541

 97 TUREFOR2 5 .737 .000 10.596 1.007

 98 TUREFOR3 4 .900 .000 24.032 2.688

 99 TUREFOR4 5 .531 .000 53.497 2.090

100 TUREFOR5 3 .562 .000 43.401 3.211

101 TUREFOR6 3 -.615 .000 81.936 1.413

102 TUREFOR7 3 .559 .000 20.701 2.972

103 TUREGUL 10 -.117 .000 63.407 5.109

104 TUSHARE 4 -.646 .000 54.479 4.378

105 TUWAGES 5 -.148 .000 73.583 1.196

106 TUWAGES2 5 .828 .000 79.278 2.261

107 UNIONMORE 9 .094 .000 41.461 4.978

108 WAGECLM 6 .599 .000 31.193 11.804

109 WORKERPART1 4 .002 .000 72.190 .825

110 WORKERPART2 4 -.317 .000 53.278 10.965

111 WORKERPART3 2 -1.000 .000 63.853 2.814

112 WORKERPART4 2 -1.000 .000 70.181 3.075

113 WORKERS 7 .895 .000 75.089 8.294

114 BENFTSWOM 4 .966 .000 68.311 5.716

115 DAMLIVES 15 .810 .000 70.923 4.835

116 DOLE 30 .828 .000 47.311 15.149

117 DOLEFIDL 25 .683 .000 46.721 5.602

118 FALSECLM 20 .476 .000 19.529 5.889

119 GOVHAND 3 .753 .000 29.312 2.734

120 GOVTSJOB 3 .839 .000 65.240 6.098

121 GOVWASTE 2 -1.000 .000 19.392 3.434

122 LESSBENF 2 1.000 .000 84.920 9.957

123 MOREWELF 25 .877 .000 58.099 10.732

124 MUMPOOR 5 .950 .000 67.444 9.124

125 PROUDWLF 16 .673 .000 79.831 2.406

126 RENTACT 2 1.000 .000 64.871 4.265

127 SOCBENEF 2 1.000 .000 37.154 8.693

128 SOCHELP 25 .897 .000 51.448 8.385

129 UNEBENEF 4 .190 .000 41.532 26.500

130 UNEBENEF2 2 1.000 .000 61.669 5.419

131 WELFBEN 8 .869 .000 54.034 19.423

132 WELFFEET 25 .944 .000 42.458 13.475

133 WELFHELP 27 .475 .000 49.749 4.924

134 WELFRESP 14 .551 .000 39.900 6.135

135 WELFSPEN 3 -.567 .000 57.703 2.351

136 WELFSTIG 14 .473 .000 65.156 3.881

137 BEDTAX 2 -1.000 .000 51.073 3.372

138 BBC 3 .973 .000 55.313 4.166

139 COMPREH 3 .738 .000 45.542 4.726

140 COMPSCH 4 .920 .000 48.176 4.599

141 CONCORDE 2 1.000 .000 55.453 4.804

142 GOVROLE1 5 .538 .000 57.114 6.818

143 GOVROLE2 4 .687 .000 34.326 2.092

144 GOVROLE3 3 .225 .000 57.339 6.979

145 GOVROLE4 5 -.588 .000 11.571 1.892

146 GOVROLE5 4 -.370 .000 11.266 2.755

147 GOVROLE6 3 .683 .000 44.595 3.725

148 GOVROLE8 2 -1.000 .000 26.643 1.427

149 HLPPRMED 4 .253 .000 59.510 4.072

150 HLTHFREE 5 -.887 .000 86.706 1.553

151 HLTHPRIO 5 .585 .000 75.980 1.067

152 NATNL1 3 .430 .000 51.321 13.159

153 NATNL2 3 1.000 .000 44.045 18.774

154 NATNL2P 5 .863 .000 64.258 4.456

155 NATNL3 7 -.452 .000 34.502 8.628

156 NATNL4 4 .384 .000 35.643 9.803

157 NATNL5 2 1.000 .000 31.397 1.133

158 NATNLSTN 3 .976 .000 46.553 10.324

159 NATPRIV 7 .331 .000 50.748 14.804

160 NATPRIV2 2 -1.000 .000 62.629 3.426

161 NATSTEEL 3 .872 .000 28.909 2.942

162 NATSTEEL2 2 1.000 .000 36.386 2.639

163 PRENTBST 9 .449 .000 47.834 8.444

164 PRENTBST2 7 .353 .000 45.994 5.223

165 PRENTBST3 7 -.223 .000 55.971 3.774

166 PRIVBUSIN 3 -.780 .000 34.397 2.644

167 PRIVEDUC 4 .869 .000 24.666 4.297

168 PRIVELECT 2 -1.000 .000 68.952 6.855

169 PRIVFAR 2 -1.000 .000 72.132 7.256

170 PRIVINS 5 -.928 .000 66.226 1.549

171 PRIVSCH 5 .397 .000 70.491 7.673

172 PRMEDNHS 4 .418 .000 64.009 2.466

173 PRMEDPRV 4 .370 .000 65.659 .978

174 PUBOWNST 5 .052 .000 62.150 4.234

175 PUBOWNST2 7 .819 .000 60.792 4.725

176 PUBOWNST3 7 .134 .000 55.781 3.774

177 PUBSERV 3 -.987 .000 62.828 3.399

178 PUBSERVS 3 .171 .000 84.706 4.142

179 PUBSERVS2 3 .129 .000 84.077 4.591

180 PUBSERVS3 3 .171 .000 84.706 4.142

181 RPRNAT 3 1.000 .000 44.007 18.740

182 SOLDOFF 6 .496 .000 74.496 4.216

183 STATEOWN 7 .913 .000 32.069 8.874

184 ECOHELP3 8 .940 .000 90.837 2.182

185 EDUC 20 .481 .000 86.884 10.975

186 EDUC2 3 .946 .000 69.283 5.418

187 GOVECON3 3 -1.000 .000 43.468 4.964

188 GOVEDSP 3 -.064 .000 95.487 1.914

189 GOVNHSSP 7 .731 .000 93.471 2.446

190 HEFEE 2 1.000 .000 70.398 2.071

191 HEFEENOW 3 .958 .000 80.513 1.229

192 HEGRANT 4 .772 .000 66.574 5.414

193 HEGRANT2 3 .987 .000 89.143 3.663

194 NHS 20 .285 .000 86.109 16.048

195 NHSFUNDS 4 .122 .000 92.583 1.437

196 PENSIONS 20 .718 .000 97.807 1.285

197 PENSIONS2 3 -.298 .000 96.198 1.280

198 RIDPOVTY 7 .741 .000 90.599 5.763

199 ROADS 20 .228 .000 82.187 12.208

200 ROADS2 3 -.853 .000 9.201 .978

201 SOCSPND 3 -1.000 .000 64.475 10.839

202 SOCSPND1 8 .912 .000 29.490 7.830

203 SOCSPND2 8 .689 .000 95.018 2.343

204 SOCSPND3 7 .779 .000 94.320 1.247

205 SOCSPND4 7 -.268 .000 63.916 3.941

206 SOCSPND5 7 .065 .000 96.444 .999

207 SOCSPND6 7 .289 .000 98.976 .411

208 PUBSERVS1 3 .260 .000 45.980 6.021

209 PUBMORI2 3 .547 .000 34.667 3.800

210 HILOWTAX 5 .013 .000 77.234 2.086

211 INDTAX 3 .972 .000 19.367 9.017

212 LTAXSERV 3 .953 .000 42.898 19.046

213 MIDTAX 2 -1.000 .000 10.599 1.165

214 RTXSPD 3 .689 .000 86.087 3.526

215 RTXSPD2 2 1.000 .000 85.961 1.743

216 RTXSPDP 9 .275 .000 88.501 2.516

217 TAXBETTER 10 .352 .000 77.175 3.691

218 TAXME 2 -1.000 .000 33.754 1.611

219 TAXPROP 2 1.000 .000 46.979 1.858

220 TAXSPEND 31 .817 .000 89.623 5.113

221 TAXSPND1 19 .918 .000 81.466 8.558

222 TAXSPND2 6 .840 .000 64.052 11.229

223 TAXSPND3 4 .871 .000 34.082 8.186

224 TAXSPND4 2 1.000 .000 69.102 1.425

225 TAXSPND6 4 .740 .000 80.218 6.354

226 TAXSPND7 4 .980 .000 81.469 7.161

227 TAXSPND8 2 1.000 .000 52.815 8.589

228 TAXOREFF 3 .260 .000 45.980 6.021

229 PUBSEREFF 3 .547 .000 34.667 3.800

230 TOOMUCH 2 -1.000 .000 28.601 2.794

231 REDUCEDEF 2 -1.000 .000 73.761 .077

232 TAXORSERVICES 2 1.000 .000 33.611 4.331

233 BASINC 2 1.000 .000 72.330 2.451

234 BUYEDUCN 4 .506 .000 40.408 5.635

235 BUYHLTH 4 .746 .000 40.044 5.737

236 DIFFSNEC 4 .519 .000 69.888 6.234

237 EQUOPP 4 -.572 .000 85.824 1.640

238 FREEEQU 3 .946 .000 30.878 4.249

239 GINCDIF 4 -.402 .000 74.011 1.609

240 GOVRESP7 8 .030 .000 73.801 4.377

241 INCDIFCC 12 .384 .000 72.168 5.456

242 INCDIFFS 5 .390 .000 89.034 3.271

243 INCEQUAL 3 -.963 .000 42.180 10.909

244 INCLMTS 7 .661 .000 29.623 3.366

245 INCOMGAP 26 .743 .000 81.707 3.699

246 INEQJOIN 3 .899 .000 52.502 1.587

247 INEQRICH 5 .785 .000 75.323 3.927

248 LABINCEQ 3 -.310 .000 91.907 .883

249 MSTRERIR 6 .882 .000 88.261 1.666

250 NHSLIMIT 19 .266 .000 75.338 2.751

251 PAYQUALS 2 1.000 .000 24.486 2.476

252 PAYRESP 2 1.000 .000 12.560 2.354

253 PAYSTUDY 4 -.051 .000 22.131 .651

254 POORTAX 2 1.000 .000 93.584 .937

255 REDISTRB 29 .734 .000 56.368 6.943

256 REDISTRB2 4 .736 .000 69.940 3.521

257 REDISTRB5 3 .911 .000 47.043 3.334

258 REDUCPOV 2 -1.000 .000 83.506 .866

259 RICHLAW 28 .648 .000 77.358 4.259

260 RICHLAW2 6 .220 .000 82.123 2.981

261 RICHLAW3 7 .727 .000 80.482 2.367

262 RICHTAX 2 -1.000 .000 86.688 2.864

263 RINCEQ 5 .116 .000 68.806 2.600

264 SAMEEDUC 5 .927 .000 55.178 4.574

265 SAMEHLTH 5 .826 .000 53.673 4.946

266 SCOPPORT 10 .652 .000 70.322 4.093

267 SOCCLASSOPP 4 .516 .000 69.750 2.573

268 WEALTH 26 .373 .000 81.752 2.461

269 WEALTH1 7 .037 .000 80.592 2.724

270 WEALTH2 7 .313 .000 78.318 2.901

271 WHYNEED 9 .889 .000 37.878 4.873

272 WHYNEED2 2 1.000 .000 39.618 8.925

273 WHYNEED3 4 .495 .000 55.361 8.457

274 CONCERN 10 -.026 .000 41.962 7.584

275 ECONSIT 2 1.000 .000 70.500 4.500

276 ECOSOLUT 2 -1.000 .000 80.588 2.956

277 INFCNTRL 9 .413 .000 50.156 8.024

278 INFVUNE 4 .906 .000 83.884 2.547

279 UNEFAULT 4 -.723 .000 92.249 2.111

280 UNEMPBAD 7 .892 .000 57.055 3.508

281 UNEMPINF 12 .282 .000 66.977 11.012

282 UNEMPINF2 2 -1.000 .000 56.089 13.097

283 UNEMPINF3 14 .515 .000 69.766 16.495

284 UNEMPINF4 7 .239 .000 80.408 1.899

285 UNEMPINF5 8 .578 .000 83.653 1.354

286 UNEMPJOB 25 .813 .000 29.866 14.971

287 UNEMPLEARN 2 1.000 .000 58.313 4.313

288 UNEMPINFL 4 .524 .000 67.843 3.347

Dimension 1 Information

Eigen Estimate 12.34 of possible 26.46

 Pct Variance Explained: 46.64

Weighted Average Metric: Mean: 56.37 St. Dev: 4.97

1. **Estimation of annual Labour vote intentions using wcalc**

Estimation Report for File: C:\Users\jbartl\Desktop\Approval\Vote intentions\Lab\_Vote intentions\_6 October.txt

 5411 records after date scan

Period: 1943 to 2016 74 Time Points

Number of Series: 20

Exponential Smoothing: Off

Iteration History: Dimension 1

Iter Convergence Criterion Items Reliability AlphaF AlphaB

 1 .7982 .001 20 .977 1.000 1.000

 2 .0005 .001 20 .977 1.000 1.000

Loadings and descriptive variable information

 Dim 1 Dim 2

 Variable Cases Loading Loading Mean Std Deviation

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 1 ANGUS REID 5 .985 .000 34.665 7.584

 2 ASHCROFT 2 1.000 .000 31.810 .634

 3 AUDIENCESELECT 8 .875 .000 38.314 4.439

 4 BMG 2 1.000 .000 31.667 .667

 5 BPIX 7 .966 .000 33.681 5.215

 6 COMRES 12 .916 .000 34.239 4.898

 7 GALLUP1 60 .985 .000 43.713 5.996

 8 HARRIS 21 .970 .000 40.630 8.678

 9 ICM 28 .960 .000 40.034 6.409

 10 MORI 41 .979 .000 41.043 7.269

 11 MARPLAN 8 .772 .000 36.726 3.089

 12 NMR 3 .997 .000 42.333 4.028

 13 NOP 43 .956 .000 43.319 6.455

 14 OPINIUM 8 .979 .000 34.110 3.516

 15 PANELBASE 2 1.000 .000 32.571 1.571

 16 ORC 8 .960 .000 40.756 4.844

 17 POPULUS 13 .973 .000 35.143 3.641

 18 SURVATION 6 .974 .000 34.719 2.488

 19 TNSBMRB 5 .950 .000 37.008 3.040

 20 YOUGOV 16 .936 .000 36.109 4.378

Dimension 1 Information

Eigen Estimate 3.72 of possible 4.03

Pct Variance Explained: 92.36

Weighted Average Metric: Mean: 37.10 St. Dev: 4.44

1. **Estimation of annual Labour party competence using wcalc**

Estimation Report for File: C:\Users\jbartl\Desktop\Approval\Approval data\Best party\Best\_Lab\_competence\_1 August 2016.txt

 4116 records after date scan

Period: 1951 to 2015 65 Time Points

Number of Series: 173

Exponential Smoothing: Off

Iteration History: Dimension 1

Iter Convergence Criterion Items Reliability AlphaF AlphaB

 1 .4500 .001 173 .752 1.000 1.000

 2 .0345 .001 173 .822 1.000 1.000

 3 .0049 .001 173 .819 1.000 1.000

 4 .0097 .001 173 .812 1.000 1.000

 5 .0071 .002 173 .805 1.000 1.000

 6 .0071 .002 173 .799 1.000 1.000

 7 .0042 .002 173 .798 1.000 1.000

 8 .0018 .002 173 .800 1.000 1.000

Loadings and descriptive variable information

 Dim 1 Dim 2

 Variable Cases Loading Loading Mean Std Deviation

-----------------------------------------------------------------

 1 GALBAL 3 .691 .000 24.667 5.437

 2 GALPPSLF 2 1.000 .000 43.750 .250

 3 GALBSTSLF 9 .678 .000 39.926 4.734

 4 GALBSTSLF2 5 .804 .000 37.000 1.378

 5 GALPM 3 .553 .000 29.667 4.028

 6 GALPM2 3 .757 .000 30.667 4.784

 7 GALTRUST 3 .947 .000 26.167 3.424

 8 GALPROMISE 3 .336 .000 30.167 3.009

 9 GALINTSLF 3 1.000 .000 38.500 2.677

 10 GALPOUND 3 .816 .000 23.333 4.643

 11 GALPROSP2 3 .890 .000 31.333 4.110

 12 GALEXPORT 3 .853 .000 28.000 3.742

 13 GALNATPV 3 .879 .000 33.333 1.247

 14 GALPROSP3 2 1.000 .000 38.875 .125

 15 GALPROSP4 3 .892 .000 32.000 6.683

 16 GALECON1 7 .395 .000 31.917 2.953

 17 GALPROSP5 3 .979 .000 24.667 3.682

 18 GALFAMSTD 2 1.000 .000 30.875 .625

 19 GALINT 2 -1.000 .000 41.400 .600

 20 GALECON2 2 1.000 .000 37.100 1.100

 21 GALCASE 4 .829 .000 43.417 8.814

 22 GALPRICES1 4 .971 .000 41.750 3.269

 23 GALCOST1 2 1.000 .000 29.000 4.000

 24 GALCOST2 6 .383 .000 35.500 4.359

 25 GALPRICES2 2 1.000 .000 36.500 2.500

 26 GALPRICES3 2 1.000 .000 26.500 7.500

 27 GALPRICES4 3 -.853 .000 36.333 1.247

 28 GALINF1 3 .221 .000 28.750 2.475

 29 GALINF2 9 .887 .000 39.016 6.455

 30 GALINF3 5 .960 .000 33.095 6.636

 31 GALINF4 2 1.000 .000 30.500 7.500

 32 GALINF5 6 -.179 .000 23.747 1.698

 33 GALPRICES5 2 1.000 .000 25.000 1.500

 34 GALINF6 2 -1.000 .000 40.800 .200

 35 GALUN1 7 .825 .000 38.524 3.645

 36 GALLFULL 6 .480 .000 32.667 7.063

 37 GALUN2 11 .796 .000 58.758 5.520

 38 GALUN3 5 -.521 .000 39.981 4.671

 39 GALUN4 3 .265 .000 37.667 4.110

 40 GALUN5 6 .590 .000 42.500 1.683

 41 GALUN6 2 -1.000 .000 40.375 .875

 42 GALTAX1 4 .178 .000 28.500 5.500

 43 GALTAX2 9 .897 .000 40.685 5.308

 44 GALTAX3 5 -.048 .000 29.562 2.859

 45 GALTAX4 3 -.657 .000 20.000 2.160

 46 GALTAX5 2 1.000 .000 21.625 .375

 47 GALNHS1 6 .705 .000 48.678 2.882

 48 GALNHS2 4 .564 .000 42.500 2.062

 49 GALNHS3 6 .791 .000 42.667 3.782

 50 GALNHS4 11 .307 .000 61.231 5.601

 51 GALNHS5 2 1.000 .000 44.500 2.500

 52 GALNHS6 2 1.000 .000 50.250 2.250

 53 GALEDUC1 2 -1.000 .000 33.500 .500

 54 GALEDUC2 6 .631 .000 39.244 2.589

 55 GALEDUC3 2 1.000 .000 35.250 .250

 56 GALEDUC4 2 1.000 .000 49.300 1.300

 57 GALEDUC5 6 .880 .000 35.875 3.233

 58 GALEDUC6 9 .910 .000 51.739 6.459

 59 GALPENSION1 4 .201 .000 43.375 4.992

 60 GALPENSION2 9 .275 .000 51.665 4.331

 61 GALPENSION4 3 -.571 .000 64.083 .717

 62 GALPENSION5 5 .376 .000 49.586 1.773

 63 GALPENSION6 2 1.000 .000 53.375 1.625

 64 GALHOUSE1 4 .977 .000 36.750 1.639

 65 GALHOUSE2 4 -.034 .000 37.500 5.766

 66 GALRENTS1 2 -1.000 .000 41.000 5.000

 67 GALHOUSE3 5 -.725 .000 23.252 2.191

 68 GALSTRIKES1 2 1.000 .000 42.500 .500

 69 GALSTRIKES2 5 .286 .000 35.700 5.776

 70 GALSTRIKES3 6 -.019 .000 30.569 2.343

 71 GALLABREL1 5 .371 .000 45.033 2.091

 72 GALUNIONS1 3 .993 .000 26.333 3.704

 73 GALSTRIKES4 7 -.020 .000 37.417 5.465

 74 GALSTRIKES5 9 .868 .000 41.884 6.886

 75 GALSTRIKES6 3 .875 .000 23.667 6.650

 76 GALHANG1 3 .987 .000 19.000 1.414

 77 GALLAW1 6 .749 .000 22.247 1.077

 78 GALLAW2 11 .919 .000 36.094 8.679

 79 GALMORAL1 3 .975 .000 45.778 5.606

 80 GALHONEST1 3 .998 .000 44.278 6.398

 81 GALLAW3 5 .785 .000 25.981 3.147

 82 GALCRIME1 3 -.140 .000 19.667 3.771

 83 GALCRIME2 2 -1.000 .000 22.375 .375

 84 GALIMMIG1 3 .928 .000 20.667 4.110

 85 GALCOLOUR 2 1.000 .000 11.500 3.500

 86 GALLIMIG2 5 .859 .000 26.800 3.250

 87 GALRACE1 5 .740 .000 33.962 3.041

 88 GALLIMIG3 5 .923 .000 20.495 1.689

 89 GALFREE 3 .853 .000 24.667 1.247

 90 GALPRIVACY 5 .518 .000 23.733 1.551

 91 GALSPEECH 5 -.024 .000 31.833 2.201

 92 GALDEMO1 2 1.000 .000 27.000 .500

 93 GALEEC1 2 -1.000 .000 32.500 2.500

 94 GALEEC2 5 -.017 .000 28.333 3.904

 95 GALEUROPE1 6 .931 .000 31.667 6.687

 96 GALEEC3 2 1.000 .000 24.500 9.500

 97 GALCOMMKT1 6 -.616 .000 23.428 3.098

 98 GALLEUROPE2 7 .901 .000 37.414 12.931

 99 GALDEFENCE1 2 1.000 .000 27.500 .500

100 GALHBOMB1 3 -.839 .000 25.667 1.247

101 GALHBOMB2 3 -.431 .000 22.667 1.700

102 GALDEFENCE2 6 .722 .000 26.278 .831

103 GALDEFENCE3 9 .838 .000 30.268 6.516

104 GALDEFENCE4 2 1.000 .000 17.000 2.000

105 GALDEFENCE5 2 1.000 .000 16.625 .375

106 GALDEFENCE6 6 .524 .000 22.406 .995

107 GALREPUTE 3 .986 .000 23.667 2.494

108 GALFOREIGN1 3 .970 .000 23.333 2.055

109 GALWORLD1 2 -1.000 .000 28.250 .250

110 GALPEACE1 2 1.000 .000 28.500 .500

111 GALFOREIGN2 3 .683 .000 26.667 .471

112 GALMODERN 2 -1.000 .000 35.500 1.500

113 GALHOME1 9 .230 .000 59.985 5.563

114 GALENVIR1 11 .820 .000 31.799 7.752

115 GALPUBTRS1 8 .641 .000 54.371 5.529

116 GALWOMEN1 10 .862 .000 42.106 5.807

117 GALNIRE1 2 1.000 .000 65.000 7.000

118 GALUNITY 5 .971 .000 26.748 2.856

119 GALFAIR1 5 .446 .000 31.367 2.154

120 GALYOUNG1 2 -1.000 .000 20.000 5.000

121 GALPOLICY 23 .932 .000 33.461 5.848

122 YGECON 6 .546 .000 24.754 2.225

123 YGNHS 11 .838 .000 33.170 4.358

124 YGIMMIG 11 .946 .000 15.537 2.075

125 YGLAW 11 .935 .000 23.869 2.853

126 YGEDUC 11 .904 .000 29.597 3.407

127 YGUNEM 9 .859 .000 30.985 5.754

128 YGEUROPE 4 .994 .000 20.420 .854

129 YGWELF 2 1.000 .000 28.429 .571

130 YGHOUSE 2 1.000 .000 29.571 .714

131 YGTAX 11 .922 .000 25.740 3.003

132 MORIANIMAL 11 .491 .000 18.136 4.338

133 MORIIMMIG 2 1.000 .000 20.750 .750

134 MORIASYLUM 3 .922 .000 15.000 1.414

135 MORIASIMIG1 7 .869 .000 15.857 2.531

136 MORIASIMIG2 3 .627 .000 19.333 1.247

137 MORIBNFTS 3 .869 .000 31.000 1.414

138 MORICONST 11 .895 .000 22.364 5.381

139 MORILAW1 25 .923 .000 23.935 5.622

140 MORILAW2 7 .607 .000 21.571 2.611

141 MORILAW3 3 .338 .000 19.667 .943

142 MORIDEF2 24 .550 .000 22.389 4.103

143 MORIDISARM 2 -1.000 .000 30.250 1.750

144 MORIDEF3 2 1.000 .000 16.500 .500

145 MORIEDUC1 29 .795 .000 35.089 7.444

146 MORIEDUC2 3 .984 .000 30.667 .471

147 MORIEDUC4 2 1.000 .000 22.625 8.625

148 MORIENVIR2 17 .902 .000 17.118 3.628

149 MORICMMKT1 7 .860 .000 24.429 2.770

150 MORIEUROP1 17 .812 .000 24.990 5.162

151 MORIEUROP2 3 .763 .000 23.000 1.633

152 MORINHS1 5 -.518 .000 42.000 6.350

153 MORIHLTH1 24 .507 .000 41.450 9.361

154 MORIHLTH2 3 -.984 .000 37.000 1.414

155 MORIHOUSE1 22 .515 .000 36.583 8.793

156 MORIHOUSE2 3 -.872 .000 32.333 1.247

157 MORIIRAQ 3 .970 .000 15.000 1.633

158 MORIECON1 24 .577 .000 31.696 6.519

159 MORIECON2 3 .011 .000 21.333 1.247

160 MORINIRE1 10 .598 .000 29.550 15.376

161 MORIPENS1 16 .639 .000 29.625 9.178

162 MORIPUBTR1 20 .765 .000 33.025 7.233

163 MORISTRIKE1 6 .731 .000 36.656 3.470

164 MORITDUN 14 .556 .000 40.250 6.641

165 MORIUNEM1 31 .802 .000 38.675 7.794

166 MORIUNEM2 3 -.984 .000 30.333 .471

167 GALECPRB1 13 .897 .000 42.247 8.593

168 BSTPMGAL 24 .901 .000 33.520 11.759

169 MORIBSTPM1 3 -.365 .000 44.226 1.408

170 MORIBSTPM2 15 .676 .000 32.067 8.529

171 YGBSTPM 8 .063 .000 22.070 1.255

172 GALBSTLEAD 32 .928 .000 31.021 8.239

173 BESBSTPM 5 -.893 .000 22.778 2.474

Dimension 1 Information

Eigen Estimate 9.86 of possible 16.71

 Pct Variance Explained: 59.

Weighted Average Metric: Mean: 31.58 St. Dev: 3.46

Materials 4-6 are the regression output for tables 3-5 produced using the R statistical package.

Utility functions

dif<-function(series){

 res<-array(NA, length(series))

 res[2:length(series)]<-series[2:(length(series))]-series[1:(length(series)-1)]

 return(res)

}

lagged<-function(series,k){

 res<-array(NA, length(series))

 res[(k+1):length(series)]<-series[1:(length(series)-k)]

 return(res)

}

############

1. Output for Table 3 – What determines mood

xeq<-xtr<-UKBartledata[c('unem', 'avg\_tax', 'domestic\_spend1')]

xeq[1:5,]<-NA

xtr[1:5,]<-NA

dv<-UKBartledata$mood180\_u

#Remove observations with missing values

xeq<-xeq[6:71,]

xtr<-xtr[6:71,]

dv<-dv[6:71]

###

ecmres<-ecm(dv, xeq, xtr)

Call:

lm(formula = dy ~ ., data = x)

Residuals:

 Min 1Q Median 3Q Max

-7.4155 -1.2261 -0.0929 1.1664 7.3682

Coefficients:

 Estimate Std. Error t value Pr(>|t|)

(Intercept) 67.1642 10.4486 6.428 2.84e-08 \*\*\*

deltaunem 0.5893 0.4569 1.290 0.20231

deltaavg\_tax -0.1103 0.3463 -0.318 0.75129

deltadomestic\_spend1 -0.5974 0.2869 -2.083 0.04179 \*

unemLag1 0.8537 0.2079 4.106 0.00013 \*\*\*

avg\_taxLag1 -0.3673 0.1453 -2.529 0.01424 \*

domestic\_spend1Lag1 -0.4516 0.1579 -2.860 0.00590 \*\*

yLag1 -0.8101 0.1146 -7.066 2.47e-09 \*\*\*

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 2.627 on 57 degrees of freedom

Multiple R-squared: 0.5055, Adjusted R-squared: 0.4447

F-statistic: 8.323 on 7 and 57 DF, p-value: 5.752e-07

##Additional calculations for ADF test

# adf test for mood equation

lmres<-lm(mood180\_u~unem+avg\_tax+domestic\_spend1, data=UKBartledata)

summary(lmres)

residlm<-residuals(lmres)

UKBartledata$err\_mood<-residlm

adf.test(residlm)

Augmented Dickey-Fuller Test

data: residlm

Dickey-Fuller = -4.5245, Lag order = 4, p-value = 0.01

alternative hypothesis: stationary

##Calculating MacKinnon 1% Critical Value for Error correction term.

McK\_.01\_k3<-c(-4.0947, -8.59, -2, -65)

##Formula from Ericsson and MacKinnon (2002)

McK\_crit<-function(a, t){

 return(a[1]+a[2]\*t^-1+a[3]\*t^-2+a[4]\*t^-3)

}

#Critical 1% value for mood ECM

McK\_crit(McK\_.01\_k3, 64)

-4.229

###############################

1. Output for Table 4 – What determines support for Labour

xeq<-xtr<-UKBartledata[c('mood180\_u', 'labcomp\_u’)]

xeq[1:5,]<-NA

xtr[1:5,]<-NA

xeq<-xeq[6:71,]

xtr<-xtr[6:71,]

dv<-UKBartledata$lab\_u

dv<-dv[6:71]

ecmres<-ecm(dv, xeq, xtr)

Call:

lm(formula = dy ~ ., data = x)

Residuals:

 Min 1Q Median 3Q Max

-5.7382 -1.1893 0.2081 1.4333 4.1385

Coefficients:

 Estimate Std. Error t value Pr(>|t|)

(Intercept) -7.49522 4.44617 -1.686 0.097213 .

deltamood180\_u 0.06239 0.09656 0.646 0.520760

deltalabcomp\_un 0.74413 0.10736 6.931 3.82e-09 \*\*\*

mood180\_uLag1 0.16712 0.07700 2.170 0.034082 \*

labcomp\_unLag1 0.61915 0.16365 3.783 0.000369 \*\*\*

yLag1 -0.57834 0.11856 -4.878 8.73e-06 \*\*\*

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 2.266 on 58 degrees of freedom

Multiple R-squared: 0.5591, Adjusted R-squared: 0.5211

F-statistic: 14.71 on 5 and 58 DF, p-value: 2.645e-09

lmres<-lm(mood180\_u~unem+avg\_tax+domestic\_spend1, data=UKBartledata)

summary(lmres)

residlm<-resid(lmres)

UKBartledata$err\_mood<-residlm

> adf.test(residlm)

 Augmented Dickey-Fuller Test

data: residlm

Dickey-Fuller = -4.2711, Lag order = 3, p-value = 0.01

alternative hypothesis: stationary

Warning message:

In adf.test(residlm) : p-value smaller than printed p-value

>

> McK\_crit(McK\_.01\_k3, 35)

[1] -4.343277

########################################

1. Output for Table 5 – What explains Government spending

###

###Model 1

###

lmres<-lm(dif(domestic\_spend1)~lagged(mood180\_u,1)+dif(unem)+lagged(inflation,1), data=UKBartledata)

summary(lmres)

Call:

lm(formula = dif(domestic\_spend1) ~ lagged(mood180\_u, 1) + dif(unem) +

 lagged(inflation, 1), data = UKBartledata)

Residuals:

 Min 1Q Median 3Q Max

-2.4603 -0.8835 -0.1262 0.6571 4.8747

Coefficients:

 Estimate Std. Error t value Pr(>|t|)

(Intercept) 2.40047 2.32678 1.032 0.30630

lagged(mood180\_u, 1) -0.03332 0.03965 -0.840 0.40409

dif(unem) 0.73579 0.23489 3.132 0.00266 \*\*

lagged(inflation, 1) -0.08290 0.04520 -1.834 0.07153 .

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.33 on 61 degrees of freedom

 (6 observations deleted due to missingness)

Multiple R-squared: 0.1574, Adjusted R-squared: 0.1159

F-statistic: 3.797 on 3 and 61 DF, p-value: 0.01458

###

###Model 2

####

lmres<-lm(dif(domestic\_spend1)~lagged(mood180\_u,1)+lagged(mood180\_u, 2)+lagged(mood180\_u, 3)+lagged(mood180\_u, 4)+dif(unem)+lagged(inflation,1), data=UKBartledata)

summary(lmres)

#Calculate standard error of sum of lags

std.err\_sum\_lag<-(sum(vcov(lmres)[2:5,2:5]))^.5

sum\_lag<-sum(coef(lmres)[2:5])

sum\_lag

std.err\_sum\_lag

Call:

lm(formula = dif(domestic\_spend1) ~ lagged(mood180\_u, 1) + lagged(mood180\_u,

 2) + lagged(mood180\_u, 3) + lagged(mood180\_u, 4) + dif(unem) +

 lagged(inflation, 1), data = UKBartledata)

Residuals:

 Min 1Q Median 3Q Max

-2.4081 -0.8705 -0.1768 0.4844 4.5640

Coefficients:

 Estimate Std. Error t value Pr(>|t|)

(Intercept) 1.30925 2.53586 0.516 0.60761

lagged(mood180\_u, 1) -0.06857 0.05633 -1.217 0.22846

lagged(mood180\_u, 2) -0.04911 0.05968 -0.823 0.41397

lagged(mood180\_u, 3) 0.05384 0.05663 0.951 0.34572

lagged(mood180\_u, 4) 0.04931 0.04749 1.038 0.30336

dif(unem) 0.68960 0.23740 2.905 0.00519 \*\*

lagged(inflation, 1) -0.08204 0.04524 -1.814 0.07491 .

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.325 on 58 degrees of freedom

 (6 observations deleted due to missingness)

Multiple R-squared: 0.2038, Adjusted R-squared: 0.1215

F-statistic: 2.475 on 6 and 58 DF, p-value: 0.03363

>

> #Calculate standard error of sum of lags

> std.err\_sum\_lag<-(sum(vcov(lmres)[2:5,2:5]))^.5

> sum\_lag<-sum(coef(lmres)[2:5])

> sum\_lag

[1] -0.01452151

> std.err\_sum\_lag

[1] 0.04331512

###

###Model 3

###

lmres<-lm(dif(domestic\_spend1)~lagged(mood180\_u,1)+dif(unem)+lagged(inflation,1)+lab\_govt+y1974, data=UKBartledata)

summary(lmres)

Call:

lm(formula = dif(domestic\_spend1) ~ lagged(mood180\_u, 1) + dif(unem) +

 lagged(inflation, 1) + lab\_govt + y1974, data = UKBartledata)

Residuals:

 Min 1Q Median 3Q Max

-2.4566 -0.6707 -0.1349 0.7207 3.2346

Coefficients:

 Estimate Std. Error t value Pr(>|t|)

(Intercept) 0.372676 2.152723 0.173 0.863151

lagged(mood180\_u, 1) -0.001497 0.036164 -0.041 0.967118

dif(unem) 0.796739 0.203073 3.923 0.000230 \*\*\*

lagged(inflation, 1) -0.092512 0.039255 -2.357 0.021777 \*

lab\_govt 0.674914 0.323726 2.085 0.041421 \*

y1974 4.636534 1.180724 3.927 0.000228 \*\*\*

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.147 on 59 degrees of freedom

 (6 observations deleted due to missingness)

Multiple R-squared: 0.3938, Adjusted R-squared: 0.3424

F-statistic: 7.665 on 5 and 59 DF, p-value: 1.32e-05

####

###Model 4

####

lmres<-lm(dif(domestic\_spend1)~lagged(mood180\_u,1)+lagged(mood180\_u, 2)+lagged(mood180\_u, 3)+lagged(mood180\_u, 4)+dif(unem)+lagged(inflation,1)+lab\_govt+y1974, data=UKBartledata)

summary(lmres)

#Calculate standard error of sum of lags

std.err\_sum\_lag<-(sum(vcov(lmres)[2:5,2:5]))^.5

sum\_lag<-sum(coef(lmres)[2:5])

sum\_lag

std.err\_sum\_lag

Call:

lm(formula = dif(domestic\_spend1) ~ lagged(mood180\_u, 1) + lagged(mood180\_u,

 2) + lagged(mood180\_u, 3) + lagged(mood180\_u, 4) + dif(unem) +

 lagged(inflation, 1) + lab\_govt + y1974, data = UKBartledata)

Residuals:

 Min 1Q Median 3Q Max

-2.3337 -0.8005 0.0000 0.5398 3.1145

Coefficients:

 Estimate Std. Error t value Pr(>|t|)

(Intercept) -0.597647 2.335808 -0.256 0.798994

lagged(mood180\_u, 1) -0.038387 0.051076 -0.752 0.455463

lagged(mood180\_u, 2) 0.004773 0.053677 0.089 0.929458

lagged(mood180\_u, 3) 0.011031 0.050404 0.219 0.827567

lagged(mood180\_u, 4) 0.038220 0.042048 0.909 0.367268

dif(unem) 0.781732 0.208442 3.750 0.000421 \*\*\*

lagged(inflation, 1) -0.090127 0.039754 -2.267 0.027265 \*

lab\_govt 0.601207 0.336364 1.787 0.079290 .

y1974 4.651011 1.213786 3.832 0.000324 \*\*\*

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.158 on 56 degrees of freedom

 (6 observations deleted due to missingness)

Multiple R-squared: 0.4132, Adjusted R-squared: 0.3294

F-statistic: 4.929 on 8 and 56 DF, p-value: 0.0001213

>

> #Calculate standard error of sum of lags

> std.err\_sum\_lag<-(sum(vcov(lmres)[2:5,2:5]))^.5

> sum\_lag<-sum(coef(lmres)[2:5])

> sum\_lag

[1] 0.01563724

> std.err\_sum\_lag

[1] 0.03942786

#######

###Model 5

########

#Calculate forcast of policy mood based on current knowledge

a<-auto.arima(UKBartledata$mood180\_u)

mood\_forecast<-array(NA, 71)

for(i in 3:71){

 b<-forecast(object=UKBartledata$mood180\_u[1:(i-1)], model=a, h=1)

 mood\_forecast[i]<-as.numeric(b$mean)

}

UKBartledata$mood\_forecast<-mood\_forecast

lmres<-lm(dif(domestic\_spend1)~lagged(mood180\_u,1)+lagged(mood180\_u, 2)+lagged(mood180\_u, 3)+lagged(mood180\_u, 4)+mood\_forecast+dif(unem)+lagged(inflation,1)+lab\_govt+y1974, data=UKBartledata)

summary(lmres)

#Calculate standard error of sum of lags

std.err\_sum\_lag<-(sum(vcov(lmres)[2:5,2:5]))^.5

sum\_lag<-sum(coef(lmres)[2:5])

sum\_lag

std.err\_sum\_lag

Call:

lm(formula = dif(domestic\_spend1) ~ lagged(mood180\_u, 1) + lagged(mood180\_u,

 2) + lagged(mood180\_u, 3) + lagged(mood180\_u, 4) + mood\_forecast +

 dif(unem) + lagged(inflation, 1) + lab\_govt + y1974, data = UKBartledata)

Residuals:

 Min 1Q Median 3Q Max

-2.3204 -0.7630 0.0000 0.4664 3.0193

Coefficients:

 Estimate Std. Error t value Pr(>|t|)

(Intercept) -1.007370 2.481809 -0.406 0.686390

lagged(mood180\_u, 1) -0.413738 0.729487 -0.567 0.572911

lagged(mood180\_u, 2) -0.165578 0.334643 -0.495 0.622718

lagged(mood180\_u, 3) -0.071809 0.168421 -0.426 0.671505

lagged(mood180\_u, 4) -0.008606 0.100162 -0.086 0.931842

mood\_forecast 0.682485 1.323097 0.516 0.608045

dif(unem) 0.764752 0.212388 3.601 0.000682 \*\*\*

lagged(inflation, 1) -0.084890 0.041285 -2.056 0.044522 \*

lab\_govt 0.512865 0.379440 1.352 0.182025

y1974 4.701624 1.225752 3.836 0.000325 \*\*\*

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.166 on 55 degrees of freedom

 (6 observations deleted due to missingness)

Multiple R-squared: 0.416, Adjusted R-squared: 0.3205

F-statistic: 4.354 on 9 and 55 DF, p-value: 0.0002573

#Calculate standard error of sum of lags

std.err\_sum\_lag<-(sum(vcov(lmres)[2:5,2:5]))^.5

sum\_lag<-sum(coef(lmres)[2:5])

sum\_lag

std.err\_sum\_lag

> std.err\_sum\_lag<-(sum(vcov(lmres)[2:5,2:5]))^.5

> sum\_lag<-sum(coef(lmres)[2:5])

> sum\_lag

[1] -0.6597309

> std.err\_sum\_lag

[1] 1.309902

########################################

###Additional adf tests

#ADF test for univariate series

a<-UKBartledata$mood180\_u

adf.test(a, k=3)

a<-UKBartledata$lab\_u

adf.test(a, k=3)

a<-UKBartledata$domestic\_spend1

a<-a[!is.na(a)]

adf.test(a, k=3)

> a<-UKBartledata$mood180\_u

> adf.test(a, k=3)

 Augmented Dickey-Fuller Test

data: a

Dickey-Fuller = -2.0218, Lag order = 3, p-value = 0.5664

alternative hypothesis: stationary

>

> a<-UKBartledata$lab\_u

> adf.test(a, k=3)

 Augmented Dickey-Fuller Test

data: a

Dickey-Fuller = -2.4332, Lag order = 3, p-value = 0.399

alternative hypothesis: stationary

>

> a<-UKBartledata$domestic\_spend1

> a<-a[!is.na(a)]

> adf.test(a, k=3)

 Augmented Dickey-Fuller Test

data: a

Dickey-Fuller = -1.9273, Lag order = 3, p-value = 0.6045

alternative hypothesis: stationary