Comments on

"Decolonization and Estimates of the Time Series Effect of Currency Unions: A Comment on Glick and Rose"

by Andrew K. Rose

Summary

This paper argues that Glick-Rose ("GR" hereafter) have conflated currency union dissolution with decolonization. Accordingly, GR's substantial fixed-effects estimates of the currency union effect are really the result of the collapse of trade following decolonization, and have been mis-interpreted by GR.

Analysis

The interpretation here is appealing, and I'd like to believe that there's something to it. However, the author has not made his case, and needs much more substance before this paper is publishable. There's no theory at all here, no new data, and no methodological contribution. Accordingly, the entire value-added lies in the results. The author needs to present a much more forceful case before this result is believable.

Major

You argue (p1, para 2):

"The large estimates in GR occur because changes in currency union status are highly concentrated in a group of former colonies which attained independence during the sample period. Compared with the rest of the sample, trade trends steeply downward for all countries in this group including those which never had a currency union or never abandoned one."

Well, why not simply allow a trend term for the time since decolonization? (That's what I thought you'd do when you stated later on in the same paragraph "The simple expedient of allowing a separate time effects for decolonizing countries …") I've done that (using the same data set) and it reduces the estimates essentially not at all; it's in the table below. More generally, if you think it's

decolonization which matters (as seems reasonable), then I'd like you to find the method in which decolonization matters and show how and that it "knocks out" the currency union dissolution effect.

Why is it interesting to record estimates from a subset of the data that includes only ex-colonies that have the same ex-colonizer (as you do starting on p3)? What's the motivation and justification for that? Why is it reasonable for you to simply throw away potentially valuable data? It looks just like data mining to me. Similarly, why not use the "colony" variable that GR constructed and have in the data set? (We did the long-horizon because we'd been criticized before for only using short-horizon colonial histories!). Again, your "decolonizing" variable (which should be more clearly defined) seems like simple data mining. It's much more compelling to criticize my work sticking close to my data set (as does Persson, for instance) or correcting plausible mistakes clearly (as does Nitsch, for instance).

Here's my take. Adding a variable representing the time since independence doesn't matter (details are recorded below in the program); and that should be an important part of your evidence. The effect of time since independence is negative and significant on trade; but it simply doesn't seem to compromise the currency union effect much. (I should say that I did this all very quickly so there may be some flaw in what I did; hence I append the program output.) Restricting the sample in a variety of ways doesn't matter without year effects, and only matters substantially in one (contrived) case with year effects. The latter case though is precisely the one you emphasize! So I think I can reproduce your results, but that your critique is very far from being general or convincing. You could convince me – but you haven't yet.

Estimates of Currency Union Effect on Bilateral Trade
(standard errors recorded in parentheses)

	Without year effects	With year effects
Default	.65 (.05)	.59 (.05)
Add Time since Independence	.64 (.05)	.58 (.05)
Only Common Colonizers (comcol=1)	.44 (.08)	.09 (.08)
Only Colonies-Colonizers (colony=1)	.75 (.05)	.68 (.04)
All ex-colonies (comcol=1 or colony=1)	.48 (.06)	.24 (.06)
No Common Colonizers (comcol=0)	.60 (.08)	.52 (.08)
No ex-colonies-colonizers (colony=0)	.62 (.06)	.59 (.06)
No ex-colonies (comcol=0 and colony=0)	.28 (.14)	.30 (.14)

Fixed effects (for country-pairs) estimation. Intercepts not recorded. Other controls not recorded: a) regional FTA membership; b) current colony/colonizer; c) log real GDP; d) log real GDP per capita.

The paper is very hard to follow and should be substantially rewritten to make it possible to follow. I've spent a day doing this referee report, and feel that it's longer than you spent writing

your paper. I find whole paragraphs of your paper difficult to understand (especially your empirical work). Please treat your potential audience with more respect.

Your figures make no sense to me, given that countries gained independence at different points in time. What should I interpret the year effects to mean? The figures are also scaled differently and poorly described.

It's ludicrous to conclude that we only have five years to wait. EMU will contribute a number of observations; that's true. But they're highly dependent across country-pairs and time. EMU will eventually help (as will Ecuador, El Salvador, and Guatemala), but putting a precise time frame on things by implicitly treating all observations as independent is inappropriate.

Minor

GR tried to control for colonial status in a bunch of ways. Even if you don't think we did it well, you should acknowledge our attempt more graciously.

It's inappropriate to say that "STATA drops such variables" (on p3); all time-invariant effects are dropped in fixed effects. It's not the statistical software!

The title is completely lacking in excitement and is wordy. Better marketing please!

There are an irritating number of typos. It is also rude to mis-spell names of authors (my co-author's first name is Reuven).

Endnotes should be at the end of a paragraph (preferably) and at the end of a sentence (at least). Not at the end of a word (as in note 1, 3, 4, …)

GR use the real value of trade, not volumes.

The trade data is bilateral (i.e., between countries i and j). It's poor notation and confusing to use a single letter (especially a capital "I"!) to denote this country-pair, since the characteristics of both i and j matter. Clean up your terminology. Also, don't use "Y" to denote regressor; it's accepted notation for the regressand. Especially since you use "Y" for both real GDP and the entire set of regressor (more confusion).

Tables should be self-contained and easy to read. Shape up! Make the estimation technique and controls clear, and put more explanations where they're valuable.

You say that the cross-sectional relationship seems "largely due to bias." What does that mean?

Note: the data set used in the regressions below is that of Glick-Rose and is available at:
http://www.haas.berkeley.edu/~arose/CUTSdstat.zip

```
--------------------------------------------------------------------------------
      log:  C:\res\cuts\progs\bomb.log
 log type:  text
 opened on:  15 May 2002, 19:33:36

. *
. * This STATA program tests some of the propositions in Bomberger's
. * "Decolonization and Estimates of the Time Series ..."
. *
. set more 1

. set mem 150m
(153600k)

. set matsize 200

. *
. * Read in the data, ditch unnecessary stuff
. *
. use \crap\data7aweb

. drop if lrgdp==.
(207234 observations deleted)

. *
. * Add time since independence
. *
. g byte tindep=0

. label var tindep "Time since independence

. sort pairid year

. replace tindep=1 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&(curcol==0&(
> curcol[_n-1]==1))
(39 real changes made)

. replace tindep=2 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1]
> ==1
(37 real changes made)

. replace tindep=3 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1]
> ==2
(37 real changes made)

. replace tindep=4 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1]
> ==3
(37 real changes made)

. replace tindep=5 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1]
> ==4
(37 real changes made)

. replace tindep=6 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1]
> ==5
(37 real changes made)

. replace tindep=7 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1]
> ==6
(37 real changes made)

. replace tindep=8 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1]
> ==7
(37 real changes made)

. replace tindep=9 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1]
```

```
> ==8
(37 real changes made)

. replace tindep=10 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
> ]==9
(37 real changes made)

. replace tindep=11 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
> ]==10
(37 real changes made)

. replace tindep=12 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
> ]==11
(36 real changes made)

. replace tindep=13 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
> ]==12
(36 real changes made)

. replace tindep=14 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
> ]==13
(36 real changes made)

. replace tindep=15 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
> ]==14
(36 real changes made)

. replace tindep=16 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
> ]==15
(35 real changes made)

. replace tindep=17 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
> ]==16
(35 real changes made)

. replace tindep=18 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
> ]==17
(33 real changes made)

. replace tindep=19 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
> ]==18
(31 real changes made)

. replace tindep=20 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
> ]==19
(30 real changes made)

. replace tindep=21 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
> ]==20
(28 real changes made)

. replace tindep=22 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
> ]==21
(28 real changes made)

. replace tindep=23 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
> ]==22
(25 real changes made)

. replace tindep=24 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
> ]==23
(19 real changes made)

. replace tindep=25 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
> ]==24
(18 real changes made)

. replace tindep=26 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
> ]==25
(18 real changes made)
```

. replace tindep=27 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
>]==26
(18 real changes made)

. replace tindep=28 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
>]==27
(17 real changes made)

. replace tindep=29 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
>]==28
(16 real changes made)

. replace tindep=30 if ((pairid==pairid[_n-1])&(year==(year[_n-1])+1))&tindep[_n-1
>]==29
(16 real changes made)

. *
. * Describe and summarize the data set
. *
. d

Contains data from \crap\data7aweb.dta
  obs: 219,558
  vars: 25   30 Jul 2001 07:15
  size: 26,346,960 (83.2% of memory free)
----
            storage display   value
variable name type format   label   variable label
----
cty1   int   %9.0g   IFS Country Code 1
cty2   int   %9.0g   IFS Country Code 2
year   int   %8.0g
pairid   int   %9.0g   Unique Country-Pair Identifier
landl   byte   %9.0g   # Landlocked 0/1/2
island   byte   %9.0g   # Islands 0/1/2
border   byte   %8.0g   Land Border Dummy
comlang   byte   %8.0g   1 for Common Language
comcol   byte   %8.0g   Dummy for Common Colonizer post
                                       1945
comctry   byte   %8.0g   Dummy for Same Nation/Perennial
                                       Colonies
colony   byte   %8.0g   Dummy for pairs ever in
                                       Colonial Relationship
curcol   byte   %8.0g   Dummy for pairs currently in
                                       Colonial Relationship
custrict   byte   %8.0g   Strict Currency Union
cumed   byte   %8.0g   Strict or inferred (from
                                       Transitivity) Currency Union
ltrade   float %9.0g   Log Value of Bilateral Trade in
                                       Real $
regional   byte   %8.0g   RTA Dummy
lareap   float %9.0g   Log of Product of Land Areas
ldist   float %9.0g   Log of Distance
lrgdp   float %9.0g   Log of Product of Real GDPs
lrgdppc   float %9.0g   Log of Product of Real GDPs per
                                       capita
ctyname1   str34 %34s
rgdp1   float %9.0g   Real GDP
ctyname2   str34 %34s
rgdp2   float %9.0g   Real GDP
tindep   byte   %8.0g   Time since independence

Sorted by: pairid year
    Note: dataset has changed since last saved

. sum

    Variable | Obs   Mean   Std. Dev.   Min   Max
-------------+--

```
      cty1 |  219558  292.6193  186.4426      111      964
      cty2 |  219558  565.7423  220.6132      112      968
      year |  219558  1979.758  11.98753     1948     1997
    pairid |  219558  11150.13  8554.484      765    32585
     landl |  219558  .2389118  .4596762        0        2
     island |  219558  .3444693  .5413883        0        2
     border |  219558  .0308301  .1728576        0        1
    comlang |  219558  .2266736  .4186806        0        1
     comcol |  219558  .1015722  .3020857        0        1
    comctry |  219558  .0003052  .0174662        0        1
     colony |  219558  .0209967  .1433735        0        1
     curcol |  219558  .0020496  .0452259        0        1
    custrict |  219558  .0144335  .1192698        0        1
      cumed |  219558  .0195757  .1385373        0        1
     ltrade |  219558  10.04162  3.35878  -16.09047  20.70488
    regional |  219558  .0122883  .1101698        0        1
     lareap |  219558  24.21735  3.289833  9.638662  32.19601
      ldist |  219558  8.167153  .807597  3.782556  9.421514
      lrgdp |  219558  47.85089  2.665881  35.3876  58.01698
    lrgdppc |  219558  16.03821  1.44989  10.1211  20.89841
    ctyname1 |      0
      rgdp1 |  219558  2.48e+11  6.01e+11  4.92e+07  5.37e+12
    ctyname2 |      0
      rgdp2 |  219558  7.18e+10  2.24e+11  4.75e+07  2.93e+12
     tindep |  219558  .0564088  1.01277        0       30
```

. *
. * Benchmark regression
. *
. xtreg ltrade custrict ldist lrgdp lrgdppc comlang border regional landl island l
> areap comcol curcol colony comctry, fe i(pairid)

```
Fixed-effects (within) regression          Number of obs    =   219558
Group variable (i) : pairid                Number of groups  =    11178

R-sq: within  = 0.1174                     Obs per group: min =        1
      between = 0.2289                                   avg =     19.6
      overall = 0.2236                                   max =       50

                              F(5,208375)     =  5544.92
corr(u_i, Xb)  = 0.1438            Prob > F        =   0.0000

------------------------------------------------------------------------------
     ltrade |    Coef.   Std. Err.    t   P>|t|   [95% Conf. Interval]
------------+-----------------------------------------------------------------
    custrict |  .6512318   .050578   12.88  0.000    .5521001   .7503634
      ldist |  (dropped)
      lrgdp |  .0479512   .0087746    5.46  0.000    .0307531   .0651493
    lrgdppc |  .7909501   .0140174   56.43  0.000    .7634762   .8184239
    comlang |  (dropped)
     border |  (dropped)
    regional |   .692351   .0450073   15.38  0.000    .6041379   .7805641
      landl |  (dropped)
     island |  (dropped)
     lareap |  (dropped)
     comcol |  (dropped)
     curcol |   .358431   .0881309    4.07  0.000    .1856965   .5311654
     colony |  (dropped)
    comctry |  (dropped)
      _cons |  -4.956948   .2282823  -21.71  0.000   -5.404376   -4.50952
------------+-----------------------------------------------------------------
    sigma_u |  3.3401212
    sigma_e |  1.3220505
       rho |  .86455466   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:   F(11177, 208375) =   34.50     Prob > F = 0.0000
```

. *
. * Benchmark regression with time since independence
. *

```
. xtreg ltrade custrict tindep ldist lrgdp lrgdppc comlang border regional landl i
> sland lareap comcol curcol colony comctry, fe i(pairid)

Fixed-effect s (within) regression        Number of obs   =   219558
Group variable (i) : pairid               Number of groups =    11178

R-sq:  within  = 0.1175                    Obs per group: min =       1
       between = 0.2283                               avg =     19.6
       overall = 0.2228                               max =       50

                            F(6,208374)    =   4622.06
corr(u_i, Xb)  = 0.1428          Prob > F        =   0.0000

----------------------------------------------------------------------------
     ltrade |    Coef.  Std. Err.    t   P>|t|   [95% Conf. Interval]
------------ +---------------------------------------------------------------
   custrict | .6364592  .0508861   12.51  0.000    .5367236   .7361948
     tindep | -.0129592 .0049107   -2.64  0.008   -.0225841  -.0033343
      ldist | (dropped)
      lrgdp | .047878   .0087745    5.46  0.000    .0306801   .0650759
     lrgdppc | .7912817 .0140178   56.45  0.000    .7638071   .8187562
    comlang | (dropped)
     border | (dropped)
   regional | .6919217  .0450069   15.37  0.000    .6037093   .7801342
      landl | (dropped)
     island | (dropped)
     lareap | (dropped)
     comcol | (dropped)
     curcol | .2122063  .1041015    2.04  0.042    .0081699   .4162428
     colony | (dropped)
    comctry | (dropped)
      _cons | -4.957516 .2282792  -21.72  0.000   -5.404938  -4.510095
------------ +---------------------------------------------------------------
    sigma_u | 3.3409061
    sigma_e | 1.3220316
        rho | .86461303   (fraction of variance due to u_i)
----------------------------------------------------------------------------
F test that all u_i=0:    F(11177, 208374) =    34.49      Prob > F = 0.0000

. *
. * Restrict sample to: a) comcol==1; b) colony==1; c) comcol or colony==1
. *
. xtreg ltrade custrict ldist lrgdp lrgdppc comlang border regional landl island l
> areap comcol curcol colony comctry if comcol==1, fe i(pairid)

Fixed-effects (within) regression         Number of obs   =    22301
Group variable (i) : pairid               Number of groups =     1230

R-sq:  within  = 0.0186                    Obs per group: min =       1
       between = 0.0249                               avg =     18.1
       overall = 0.0087                               max =       48

                            F(4,21067)     =    99.61
corr(u_i, Xb)  = -0.4314         Prob > F        =   0.0000

----------------------------------------------------------------------------
     ltrade |    Coef.  St d. Err.    t   P>|t|   [95% Conf. Interval]
------------ +---------------------------------------------------------------
   custrict | .4420031  .0758276    5.83  0.000    .2933752   .5906309
      ldist | (dropped)
      lrgdp | -.17549   .0250164   -7.02  0.000   -.224524   -.126456
     lrgdppc | .6286352 .0418388   15.03  0.000    .5466279   .7106424
    comlang | (dropped)
     border | (dropped)
   regional | .0544904  .1273464    0.43  0.669   -.1951183   .3040991
      landl | (dropped)
     island | (dropped)
     lareap | (dropped)
     comcol | (dropped)
     curcol | (dropped)
```

```
   colony |  (dropped)
   comctry |  (dropped)
     _cons |  6.804566  .6635942   10.25  0.000    5.503871   8.105262
------------+----------------------------------------------------------------
   sigma_u |  4.0061719
   sigma_e |  1.4960465
       rho |  .87761329   (fraction of variance due to u_i)
-----------------------------------------------------------------------------
F test that all u_i=0:    F(1229, 21067) =    34.83      Prob > F = 0.0000

. xtreg ltrade custrict ldist lrgdp lrgdppc comlang border regional landl island l
> areap comcol curcol colony comctry if colony==1, fe i(pairid)

Fixed-effects (within) regression          Number of obs     =     4610
Group variable (i) : pairid                Number of groups  =      128

R-sq:  within  = 0.3895                     Obs per group: min =      1
       between = 0.5448                                    avg =    36.0
       overall = 0.5109                                    max =      50

                             F(5,4477)       =   571.38
corr(u_i, Xb)  = 0.3737                  Prob > F        =   0.0000


-----------------------------------------------------------------------------
    ltrade |    Coef.   Std. Err.    t    P>|t|    [95% Conf. Interval]
------------+----------------------------------------------------------------
   custrict |  .7491885  .0460235   16.28  0.000    .6589598   .8394172
      ldist |  (dropped)
      lrgdp |  .2069375  .0399438    5.18  0.000    .1286279   .2852471
    lrgdppc |  .566956   .0600634    9.44  0.000    .4492022   .6847099
    comlang |  (dropped)
     border |  (dropped)
   regional |  .7646498  .1004569    7.61  0.000    .5677047   .961595
      landl |  (dropped)
     island |  (dropped)
     lareap |  (dropped)
     comcol |  (dropped)
      curcol |  .349057   .045618     7.65  0.000    .2596231   .4384909
     colony |  (dropped)
    comctry |  (dropped)
      _cons |  -6.16357  1.053135   -5.85  0.000   -8.228235  -4.098905
------------+----------------------------------------------------------------
   sigma_u |  1.4725514
   sigma_e |  .62387362
       rho |  .84782048   (fraction of variance due to u_i)
-----------------------------------------------------------------------------
F test that all u_i=0:    F(127, 4477) =    89.98       Prob > F = 0.0000

. xtreg ltrade custrict ldist lrgdp lrgdppc comlang border regional landl island l
> areap comcol curcol colony comctry if (comcol==1|colony==1), fe i(pairid)

Fixed-effects (within) regression          Number of obs     =    26911
Group variable (i) : pairid                Number of groups  =     1358

R-sq:  within  = 0.0330                     Obs per group: min =      1
       between = 0.0046                                    avg =    19.8
       overall = 0.0007                                    max =      50

                             F(5,25548)      =   174.39
corr(u_i, Xb)  = -0.2931                 Prob > F        =   0.0000


-----------------------------------------------------------------------------
    ltrade |    Coef.   Std. Err.    t    P>|t|    [95% Conf. Interval]
------------+----------------------------------------------------------------
   custrict |  .4788617  .0577428    8.29  0.000    .3656826   .5920408
      ldist |  (dropped)
      lrgdp |  -.1539186  .0224328   -6.86  0.000   -.1978881  -.109949
    lrgdppc |  .7017126  .0367206   19.11  0.000    .6297382   .773687
    comlang |  (dropped)
     border |  (dropped)
```

```
     regional |  .2254492  .1043737   2.16  0.031   .0208708  .4300276
        landl |  (dropped)
       island |  (dropped)
       lareap |  (dropped)
        comcol |  (dropped)
        curcol |  .0629062  .0935622   0.67  0.501  -.120481  .2462933
        colony |  (dropped)
       comctry |  (dropped)
        _cons |  5.516659  .5940098   9.29  0.000   4.352366  6.680952
-------------+----------------------------------------------------------------
     sigma_u |  4.2537685
     sigma_e |  1.3879765
         rho |  .90377721   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:    F(1357, 25548) =   40.2l       Prob > F = 0.0000

. xtreg ltrade custrict ldist lrgdp lrgdppc comlang border regional landl island l
> areap comcol curcol colony comctry if comcol==0, fe i(pairid)

Fixed-effects (within) regression            Number of obs     =   197257
Group variable (i) : pairid                  Number of groups  =     9948

R-sq:  within  = 0.1350                      Obs per group: min =       1
       between = 0.3137                                     avg =    19.8
       overall = 0.2860                                     max =      50

                          F(5,187304)     = 5846.35
corr(u_i, Xb)  = 0.2249            Prob > F         =    0.0000


------------------------------------------------------------------------------
       ltrade |    Coef.   Std. Err.     t    P>|t|    [95% Conf. Interval]
-------------+----------------------------------------------------------------
      custrict |  .6071117  .0768066   7.90  0.000   .4565726  .7576509
         ldist |  (dropped)
         lrgdp |  .0872798  .0093877   9.30  0.000   .0688801  .1056796
       lrgdppc |  .7745663  .0149368  51.86  0.000   .7452905  .8038422
       comlang |  (dropped)
        border |  (dropped)
      regional |  .824993  .0482219   17.11  0.000   .7304792  .9195069
         landl |  (dropped)
        island |  (dropped)
        lareap |  (dropped)
        comcol |  (dropped)
        curcol |  .4209451  .0897831   4.69  0.000   .2449722  .5969179
        colony |  (dropped)
       comctry |  (dropped)
        _cons |  -6.48706  .2439092  -26.60  0.000  -6.965116  -6.009004
-------------+----------------------------------------------------------------
     sigma_u |  3.2027475
     sigma_e |  1.2976365
         rho |  .85899032   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:    F(9947, 187304) =   34.05       Prob > F = 0.0000

. xtreg ltrade custrict ldist lrgdp lrgdppc comlang border regional landl island l
> areap comcol curcol colony comctry if colony==0, fe i(pairid)

Fixed-effects (within) regression            Number of obs     =   214948
Group variable (i) : pairid                  Number of groups  =    11050

R-sq:  within  = 0.1156                      Obs per group: min =       1
       between = 0.2216                                     avg =    19.5
       overall = 0.2165                                     max =      50

                          F(4,203894)     = 6659.59
corr(u_i, Xb)  = 0.1308            Prob > F         =    0.0000


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

```
  custrict |  .6215826  .0603261   10.30  0.000   .5033449   .7398203
     ldist |  (dropped)
     lrgdp |   .046086  .0088991    5.18  0.000    .028644   .0635279
    lrgdppc |  .7936796  .0142357   55.75  0.000   .7657781   .8215812
    comlang |  (dropped)
     border |  (dropped)
   regional |  .6886242  .0464439   14.83  0.000   .5975953   .779653
      landl |  (dropped)
     island |  (dropped)
     lareap |  (dropped)
     comcol |  (dropped)
     curcol |  (dropped)
     colony |  (dropped)
    comctry |  (dropped)
      _cons | -4.973781  .2314298  -21.49  0.000  -5.427378  -4.520184
------------+----------------------------------------------------------
   sigma_u |  3.3267988
   sigma_e |  1.3332833
       rho |  .8616106   (fraction of variance due to u_i)
--------------------------------------------------------------------------
F test that all u_i=0:   F(11049, 203894) =   33.95     Prob > F = 0.0000

. xtreg ltrade custrict ldist lrgdp lrgdppc comlang border regional landl island l
> areap comcol curcol colony comctry if (comcol==0&colony==0), fe i(pairid)

Fixed-effects (within) regression          Number of obs    =   192647
Group variable (i) : pairid                Number of groups =     9820

R-sq:  within  = 0.1330                     Obs per group: min =      1
       between = 0.3058                                   avg =   19.6
       overall = 0.2790                                   max =     50

                            F(4,182823)     =  7014.00
corr(u_i, Xb)  = 0.2128                  Prob > F        =   0.0000

--------------------------------------------------------------------------
    ltrade |    Coef.   Std. Err.     t    P>|t|    [95% Conf. Interval]
------------+----------------------------------------------------------
   custrict |  .2800133  .1381977    2.03  0.043   .0091491   .5508775
     ldist |  (dropped)
     lrgdp |  .0852368  .0095382    8.94  0.000   .0665422   .1039313
    lrgdppc |  .7785434  .0151965   51.23  0.000   .7487586   .8083283
    comlang |  (dropped)
     border |  (dropped)
   regional |  .8300927   .050027   16.59  0.000   .7320409   .9281444
      landl |  (dropped)
     island |  (dropped)
     lareap |  (dropped)
     comcol |  (dropped)
     curcol |  (dropped)
     colony |  (dropped)
    comctry |  (dropped)
      _cons | -6.518825  .2477165  -26.32  0.000  -7.004344  -6.033307
------------+----------------------------------------------------------
   sigma_u |  3.1880025
   sigma_e |  1.3097684
       rho |  .85558427   (fraction of variance due to u_i)
--------------------------------------------------------------------------
F test that all u_i=0:   F(9819, 182823) =   33.44     Prob > F = 0.0000

. *
. * Repeat but add year controls
. *
. g byte y1949=0

. g byte y1950=0

. g byte y1951=0

. g byte y1952=0
```

. g byte y1953=0

. g byte y1954=0

. g byte y1955=0

. g byte y1956=0

. g byte y1957=0

. g byte y1958=0

. g byte y1959=0

. g byte y1960=0

. g byte y1961=0

. g byte y1962=0

. g byte y1963=0

. g byte y1964=0

. g byte y1965=0

. g byte y1966=0

. g byte y1967=0

. g byte y1968=0

. g byte y1969=0

. g byte y1970=0

. g byte y1971=0

. g byte y1972=0

. g byte y1973=0

. g byte y1974=0

. g byte y1975=0

. g byte y1976=0

. g byte y1977=0

. g byte y1978=0

. g byte y1979=0

. g byte y1980=0

. g byte y1981=0

. g byte y1982=0

. g byte y1983=0

. g byte y1984=0

. g byte y1985=0

. g byte y1986=0

. g byte y1987=0

. g byte y1988=0

. g byte y1989=0

. g byte y1990=0

. g byte y1991=0

. g byte y1992=0

. g byte y1993=0

. g byte y1994=0

. g byte y1995=0

. g byte y1996=0

. g byte y1997=0

.
. replace y1949=1 if year==1949
(87 real changes made)

. replace y1950=1 if year==1950
(1115 real changes made)

. replace y1951=1 if year==1951
(1176 real changes made)

. replace y1952=1 if year==1952
(1238 real changes made)

. replace y1953=1 if year==1953
(1358 real changes made)

. replace y1954=1 if year==1954
(1369 real changes made)

. replace y1955=1 if year==1955
(1468 real changes made)

. replace y1956=1 if year==1956
(1522 real changes made)

. replace y1957=1 if year==1957
(1485 real changes made)

. replace y1958=1 if year==1958
(1562 real changes made)

. replace y1959=1 if year==1959
(1543 real changes made)

. replace y1960=1 if year==1960
(2625 real changes made)

. replace y1961=1 if year==1961
(2641 real changes made)

. replace y1962=1 if year==1962
(2775 real changes made)

. replace y1963=1 if year==1963
(2938 real changes made)

. replace y1964=1 if year==1964
(3196 real changes made)

```
. replace y1965=1 if year==1965
(3361 real changes made)

. replace y1966=1 if year==1966
(3564 real changes made)

. replace y1967=1 if year==1967
(3578 real changes made)

. replace y1968=1 if year==1968
(3529 real changes made)

. replace y1969=1 if year==1969
(4348 real changes made)

. replace y1970=1 if year==1970
(4737 real changes made)

. replace y1971=1 if year==1971
(4879 real changes made)

. replace y1972=1 if year==1972
(5074 real changes made)

. replace y1973=1 if year==1973
(5376 real changes made)

. replace y1974=1 if year==1974
(5433 real changes made)

. replace y1975=1 if year==1975
(5354 real changes made)

. replace y1976=1 if year==1976
(5393 real changes made)

. replace y1977=1 if year==1977
(5583 real changes made)

. replace y1978=1 if year==1978
(5569 real changes made)

. replace y1979=1 if year==1979
(5738 real changes made)

. replace y1980=1 if year==1980
(5895 real changes made)

. replace y1981=1 if year==1981
(6114 real changes made)

. replace y1982=1 if year==1982
(6061 real changes made)

. replace y1983=1 if year==1983
(6056 real changes made)

. replace y1984=1 if year==1984
(6058 real changes made)

. replace y1985=1 if year==1985
(6232 real changes made)

. replace y1986=1 if year==1986
(6310 real changes made)

. replace y1987=1 if year==1987
(6309 real changes made)

. replace y1988=1 if year==1988
```

(6473 real changes made)

. replace y1989=1 if year==1989
(6668 real changes made)

. replace y1990=1 if year==1990
(6620 real changes made)

. replace y1991=1 if year==1991
(6360 real changes made)

. replace y1992=1 if year==1992
(6643 real changes made)

. replace y1993=1 if year==1993
(7226 real changes made)

. replace y1994=1 if year==1994
(7514 real changes made)

. replace y1995=1 if year==1995
(7640 real changes made)

. replace y1996=1 if year==1996
(7715 real changes made)

. replace y1997=1 if year==1997
(7996 real changes made)

. *
. * Benchmark regression
. *
. xtreg ltrade custrict ldist lrgdp lrgdppc comlang border regional landl island l
> areap comcol curcol colony comctry y1949-y1997, fe i(pairid)

Fixed-effects (within) regression   Number of obs   =   219558
Group variable (i) : pairid   Number of groups =   11178

R-sq: within = 0.1322   Obs per group: min =   1
      between = 0.5386   avg =   19.6
      overall = 0.5173   max =   50

                          F(54,208326)   =   587.93
corr(u_i, Xb) = 0.3606   Prob > F   =   0.0000

----
    ltrade | Coef.   Std. Err.   t   P>|t| [95% Conf. Interval]
-----------+--
   custrict | .5915147 .0502487   11.77 0.000   .4930286   .6900009
      ldist | (dropped)
      lrgdp | .4617558 .0183709   25.14 0.000   .4257493   .4977623
    lrgdppc | .5299739 .0177778   29.81 0.000   .4951299   .564818
    comlang | (dropped)
     border | (dropped)
   regional | .8483758 .0451347   18.80 0.000   .759913   .9368387
      landl | (dropped)
     island | (dropped)
     lareap | (dropped)
     comcol | (dropped)
     curcol | .2318985 .0875182   2.65 0.008   .060365   .4034319
     colony | (dropped)
    comctry | (dropped)
      y1949 | .0274235   .227718   0.12 0.904 -.4188982   .4737451
      y1950 | -.3058189 .1844715   -1.66 0.097 -.6673785   .0557406
      y1951 | -.1491943 .1842889   -0.81 0.418 -.5103959   .2120074
      y1952 | -.2621201 .1841104   -1.42 0.155   -.622972   .0987318
      y1953 | -.3669533 .1837981   -2.00 0.046 -.7271929 -.0067136
      y1954 | -.3626035 .1838086   -1.97 0.049 -.7228638 -.0023431
      y1955 | -.3778221   .183621   -2.06 0.040 -.7377147 -.0179295
      y1956 | -.3967907 .1835381   -2.16 0.031 -.7565209 -.0370605

```
  y1957 |  -.3794196   .1836713   -2.07   0.039   -.7394108   -.0194284
  y1958 |  -.4687367    .183539   -2.55   0.011   -.8284686   -.1090047
  y1959 |  -.4608088   .1836262   -2.51   0.012   -.8207117   -.1009059
  y1960 |  -.5062163   .1824588   -2.77   0.006   -.8638309   -.1486016
  y1961 |  -.5620546   .1825225   -3.08   0.002   -.9197943    -.204315
  y1962 |  -.5962185   .1825136   -3.27   0.001   -.9539407   -.2384962
  y1963 |  -.5843475    .182507   -3.20   0.001   -.9420567   -.2266384
  y1964 |  -.5435076   .1824913   -2.98   0.003    -.901186   -.1858291
  y1965 |  -.5870739   .1825196   -3.22   0.001   -.9448079   -.2293399
  y1966 |  -.6201826   .1825129   -3.40   0.001   -.9779034   -.2624618
  y1967 |  -.6756558   .1826022   -3.70   0.000   -1.033552   -.3177601
  y1968 |  -.8020922   .1827463   -4.39   0.000   -1.160271   -.4439139
  y1969 |  -1.079358   .1826363   -5.91   0.000   -1.437321   -.7213954
  y1970 |  -1.103971   .1826993   -6.04   0.000   -1.462057   -.7458853
  y1971 |  -1.134992   .1828044   -6.21   0.000   -1.493284   -.7766997
  y1972 |  -1.084899   .1828444   -5.93   0.000    -1.44327   -.7265286
  y1973 |  -.9318528   .1829519   -5.09   0.000   -1.290434   -.5732716
  y1974 |  -.7429241   .1831035   -4.06   0.000   -1.101802   -.3840458
  y1975 |   -.806271   .1831991   -4.40   0.000   -1.165337   -.4472052
  y1976 |  -.8632074   .1833539   -4.71   0.000   -1.222577   -.5038383
  y1977 |  -.8142339   .1834983   -4.44   0.000   -1.173886   -.4545816
  y1978 |  -.8606086   .1836603   -4.69   0.000   -1.220578   -.5006389
  y1979 |  -.8443567    .183804   -4.59   0.000   -1.204608   -.4841053
  y1980 |  -.8393076   .1839053   -4.56   0.000   -1.199757   -.4788577
  y1981 |  -.9622667   .1839949   -5.23   0.000   -1.322892   -.6016412
  y1982 |  -1.110502   .1840587   -6.03   0.000   -1.471252   -.7497514
  y1983 |  -1.242642   .1841395   -6.75   0.000   -1.603551   -.8817332
  y1984 |  -1.299954   .1842696   -7.05   0.000   -1.661118   -.9387902
  y1985 |  -1.360715   .1843812   -7.38   0.000   -1.722097    -.999332
  y1986 |  -1.405706   .1845101   -7.62   0.000   -1.767341   -1.044071
  y1987 |  -1.390906    .184652   -7.53   0.000   -1.752819   -1.028993
  y1988 |  -1.358039   .1847881   -7.35   0.000   -1.720219   -.9958584
  y1989 |  -1.363974   .1849363   -7.38   0.000   -1.726444   -1.001503
  y1990 |  -1.322386   .1850642   -7.15   0.000   -1.685108    -.959665
  y1991 |  -1.341048   .1852149   -7.24   0.000   -1.704065   -.9780317
  y1992 |  -1.301035   .1853358   -7.02   0.000   -1.664289   -.9377814
  y1993 |  -1.396493   .1854537   -7.53   0.000   -1.759978   -1.033008
  y1994 |  -1.309934   .1855629   -7.06   0.000   -1.673633   -.9462355
  y1995 |  -1.207058   .1857779   -6.50   0.000   -1.571178   -.8429377
  y1996 |  -1.177959   .1859007   -6.34   0.000    -1.54232   -.8135983
  y1997 |  -1.163863   .1860781   -6.25   0.000   -1.528571   -.7991542
   _cons |  -19.54388   .6469087  -30.21   0.000    -20.8118   -18.27595
-------------+----------------------------------------------------------------
 sigma_u |  2.7474995
 sigma_e |  1.3110615
     rho |   .8145285   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(11177, 208326) =    28.07      Prob > F = 0.0000

. *
. * Benchmark regression with time since independence
. *
. xtreg ltrade custrict tindep ldist lrgdp lrgdppc comlang border regional landl i
> sland lareap comcol curcol colony comctry y1949-y1997, fe i(pairid)

Fixed-effects (within) regression              Number of obs     =   219558
Group variable (i) : pairid                    Number of groups  =    11178

R-sq:  within  = 0.1323                         Obs per group: min =        1
       between = 0.5382                                        avg =     19.6
       overall = 0.5167                                        max =       50

                              F(55,208325)     =    577.28
corr(u_i, Xb)  = 0.3601                          Prob > F        =    0.0000

------------------------------------------------------------------------------
  ltrade |     Coef.   Std. Err.     t    P>|t|    [95% Conf. Interval]
-------------+----------------------------------------------------------------
 custrict |   .5831736   .0505509   11.54   0.000    .4840951    .6822521
   tindep |  -.0073616   .0048726   -1.51   0.131   -.0169119    .0021887
```

```
       ldist |  (dropped)
       lrgdp |   .4611107   .0183758    25.09   0.000     .4250946    .4971268
      lrgdppc |   .5306019   .0177826    29.84   0.000     .4957484    .5654554
      comlang |  (dropped)
       border |  (dropped)
     regional |   .8479196   .0451356    18.79   0.000      .759455    .9363841
        landl |  (dropped)
       island |  (dropped)
       lareap |  (dropped)
       comcol |  (dropped)
       curcol |   .1489571   .1033116     1.44   0.149     -.053531    .3514453
       colony |  (dropped)
       comctry |  (dropped)
       y1949 |   .0273595   .2277173     0.12   0.904    -.4189608    .4736798
       y1950 |  -.3060612    .184471    -1.66   0.097    -.6676197    .0554973
       y1951 |  -.1494414   .1842884    -0.81   0.417    -.5106421    .2117592
       y1952 |  -.2623471   .1841099    -1.42   0.154    -.6231981    .0985038
       y1953 |  -.3671573   .1837975    -2.00   0.046    -.7273959   -.0069186
       y1954 |   -.362779   .1838081    -1.97   0.048    -.7230383   -.0025197
       y1955 |  -.3779811   .1836205    -2.06   0.040    -.7378726   -.0180895
       y1956 |  -.3969671   .1835376    -2.16   0.031    -.7566962   -.0372379
       y1957 |  -.3796188   .1836708    -2.07   0.039     -.739609   -.0196286
       y1958 |  -.4688508   .1835385    -2.55   0.011    -.8285816   -.1091199
       y1959 |  -.4608997   .1836257    -2.51   0.012    -.8208015   -.1009979
       y1960 |  -.5063224   .1824582    -2.78   0.006     -.863936   -.1487089
       y1961 |  -.5621745    .182522    -3.08   0.002    -.9199131   -.2044359
       y1962 |  -.5964354   .1825131    -3.27   0.001    -.9541566   -.2387141
       y1963 |   -.584531   .1825064    -3.20   0.001    -.9422391   -.2268229
       y1964 |  -.5436306   .1824907    -2.98   0.003     -.901308   -.1859533
       y1965 |  -.5871761   .1825191    -3.22   0.001     -.944909   -.2294432
       y1966 |  -.6202852   .1825124    -3.40   0.001     -.978005   -.2625655
       y1967 |  -.6757318   .1826016    -3.70   0.000    -1.033627   -.3178372
       y1968 |  -.8021354   .1827458    -4.39   0.000    -1.160313   -.4439582
       y1969 |   -1.07932   .1826357    -5.91   0.000    -1.437281   -.7213584
       y1970 |  -1.103882   .1826987    -6.04   0.000    -1.461967   -.7457966
       y1971 |  -1.134876   .1828038    -6.21   0.000    -1.493167   -.7765849
       y1972 |  -1.084746   .1828439    -5.93   0.000    -1.443115   -.7263763
       y1973 |  -.9316519   .1829514    -5.09   0.000    -1.290232   -.5730717
       y1974 |  -.7427033    .183103    -4.06   0.000    -1.101581   -.3838261
       y1975 |  -.8060867   .1831986    -4.40   0.000    -1.165151   -.4470219
       y1976 |  -.8629521   .1833534    -4.71   0.000     -1.22232   -.5035839
       y1977 |  -.8139236   .1834979    -4.44   0.000    -1.173575   -.4542723
       y1978 |  -.8602932   .1836599    -4.68   0.000    -1.220262   -.5003244
       y1979 |  -.8439836   .1838036    -4.59   0.000    -1.204234   -.4837331
       y1980 |  -.8388861    .183905    -4.56   0.000    -1.199335   -.4784369
       y1981 |  -.9617996   .1839946    -5.23   0.000    -1.322425   -.6011747
       y1982 |  -1.109971   .1840585    -6.03   0.000    -1.470721   -.7492209
       y1983 |  -1.242054   .1841394    -6.75   0.000    -1.602963   -.8811453
       y1984 |  -1.299284   .1842696    -7.05   0.000    -1.660448   -.9381203
       y1985 |  -1.359976   .1843813    -7.38   0.000    -1.721359   -.9985936
       y1986 |  -1.404938   .1845103    -7.61   0.000    -1.766574   -1.043303
       y1987 |  -1.390104   .1846522    -7.53   0.000    -1.752018   -1.028191
       y1988 |  -1.357186   .1847884    -7.34   0.000    -1.719367   -.9950054
       y1989 |  -1.363059   .1849367    -7.37   0.000    -1.725531   -1.000588
       y1990 |  -1.321477   .1850647    -7.14   0.000      -1.6842   -.9587553
       y1991 |  -1.340147   .1852153    -7.24   0.000    -1.703164   -.9771292
       y1992 |  -1.300222    .185336    -7.02   0.000    -1.663476   -.9369684
       y1993 |  -1.395665    .185454    -7.53   0.000    -1.759151    -1.03218
       y1994 |  -1.309094   .1855632    -7.05   0.000    -1.672793   -.9453946
       y1995 |  -1.206202   .1857782    -6.49   0.000    -1.570323   -.8420812
       y1996 |  -1.177135   .1859009    -6.33   0.000    -1.541496   -.8127737
       y1997 |  -1.163033   .1860783    -6.25   0.000    -1.527742   -.7983241
       _cons |  -19.52282    .647057   -30.17   0.000    -20.79103    -18.2546
-------------+----------------------------------------------------------------
     sigma_u |  2.7486083
     sigma_e |  1.3110575
         rho |   .8146513   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(11177, 208325) =    28.04       Prob > F = 0.0000
```

. *
. * Restrict sample to: a) comcol==1; b) colony==1; c) comcol or colony==1
. *
. xtreg ltrade custrict ldist lrgdp lrgdppc comlang border regional landl island l
> areap comcol curcol colony comctry y1949-y1997 if comcol==1, fe i(pairid)

Fixed-effects (within) regression   Number of obs   =   22301
Group variable (i) : pairid   Number of groups =   1230

R-sq: within = 0.0647   Obs per group: min =   1
       between = 0.2682   avg =   18.1
       overall = 0.2143   max =   48

                           F(51,21020)   =   28.50
corr(u_i, Xb) = -0.5178   Prob > F   =   0.0000

----
   ltrade | Coef.   Std. Err.   t   P>|t| [95% Conf. Interval]
----------+---
  custrict | .0885846   .075616   1.17   0.241   -.0596285   .2367977
     ldist | (dropped)
     lrgdp | 1.181511 .0664025   17.79   0.000   1.051357   1.311665
   lrgdppc | -.3135236 .0617362   -5.08   0.000   -.4345313   -.192516
   comlang | (dropped)
    border | (dropped)
  regional | .7457271 .1273684   5.85   0.000   .4960752   .995379
     landl | (dropped)
    island | (dropped)
    lareap | (dropped)
    comcol | (dropped)
     curcol | (dropped)
    colony | (dropped)
   comctry | (dropped)
     y1949 | (dropped)
     y1950 | (dropped)
     y1951 | .0135406 .3594415   0.04   0.970   -.6909923   .7180735
     y1952 | -.1798012 .3462696   -0.52   0.604   -.8585161   .4989137
     y1953 | -.2082193 .3314519   -0.63   0.530   -.8578905   .4414519
     y1954 | -.5635069 .3316994   -1.70   0.089   -1.213663   .0866494
     y1955 | -.5944104 .3306304   -1.80   0.072   -1.242471   .0536506
     y1956 | -.9008962 .3154201   -2.86   0.004   -1.519144   -.2826485
     y1957 | -.8030059 .3199417   -2.51   0.012   -1.430116   -.1758957
     y1958 | -1.172895 .3095743   -3.79   0.000   -1.779684   -.5661054
     y1959 | -1.292146 .3160848   -4.09   0.000   -1.911697   -.672596
     y1960 | -1.276904 .2805225   -4.55   0.000   -1.82675   -.7270587
     y1961 | -1.308973   .281602   -4.65   0.000   -1.860935   -.7570116
     y1962 | -1.430311 .2783124   -5.14   0.000   -1.975824   -.8847972
     y1963 | -1.602503 .2763591   -5.80   0.000   -2.144188   -1.060818
     y1964 | -1.431506 .2747967   -5.21   0.000   -1.970129   -.8928837
     y1965 | -1.567379 .2745833   -5.71   0.000   -2.105583   -1.029174
     y1966 | -1.724366   .273344   -6.31   0.000   -2.260141   -1.188591
     y1967 | -1.944295 .2738354   -7.10   0.000   -2.481033   -1.407557
     y1968 | -2.110398 .2758913   -7.65   0.000   -2.651166   -1.56963
     y1969 | -2.515198 .2731757   -9.21   0.000   -3.050643   -1.979752
     y1970 | -2.531584 .2737422   -9.25   0.000   -3.06814   -1.995029
     y1971 | -2.697405 .2749207   -9.81   0.000   -3.236271   -2.158539
     y1972 | -2.72687   .274988   -9.92   0.000   -3.265868   -2.187873
     y1973 | -2.69598 .2758507   -9.77   0.000   -3.236669   -2.155292
     y1974 | -2.666324 .2773343   -9.61   0.000   -3.209921   -2.122728
     y1975 | -2.737031 .2782319   -9.84   0.000   -3.282387   -2.191675
     y1976 | -2.98145 .2796061 -10.66   0.000   -3.5295   -2.433401
     y1977 | -2.999787 .2811037 -10.67   0.000   -3.550772   -2.448802
     y1978 | -3.094987 .2828193 -10.94   0.000   -3.649334   -2.540639
     y1979 | -3.05928 .2845154 -10.75   0.000   -3.616952   -2.501608
     y1980 | -3.14721 .2857055 -11.02   0.000   -3.707215   -2.587205
     y1981 | -3.261988 .2868079 -11.37   0.000   -3.824153   -2.699822
     y1982 | -3.502993 .2878709 -12.17   0.000   -4.067242   -2.938744
     y1983 | -3.747478 .2892507 -12.96   0.000   -4.314431   -3.180524
     y1984 | -3.8898 .2904003 -13.39   0.000   -4.459007   -3.320593
     y1985 | -3.934438   .291449 -13.50   0.000   -4.5057   -3.363175

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     y1986 |  -4.095114   .2926575   -13.99   0.000    -4.668745   -3.521482
     y1987 |  -4.090248   .2941052   -13.91   0.000    -4.666717   -3.513779
     y1988 |  -4.151885   .2954293   -14.05   0.000    -4.730949   -3.572821
     y1989 |  -4.152896    .296973   -13.98   0.000    -4.734986   -3.570806
     y1990 |  -4.153038   .2983549   -13.92   0.000    -4.737837    -3.56824
     y1991 |   -3.96395   .2999976   -13.21   0.000    -4.551968   -3.375931
     y1992 |  -4.133041   .3014325   -13.71   0.000    -4.723872    -3.54221
     y1993 |  -4.209633   .3032987   -13.88   0.000    -4.804122   -3.615145
     y1994 |  -4.205724   .3046729   -13.80   0.000    -4.802907   -3.608542
     y1995 |  -4.109562   .3064723   -13.41   0.000    -4.710271   -3.508853
     y1996 |  -4.020669   .3079766   -13.06   0.000    -4.624326   -3.417011
     y1997 |  -4.093967   .3100561   -13.20   0.000    -4.701701   -3.486233
      _cons |  -36.94695   2.101077   -17.58   0.000    -41.06522   -32.82868
------------+----------------------------------------------------------------
    sigma_u |  3.3503078
    sigma_e |  1.4621031
        rho |  .84001675   (fraction of variance due to u_i)
-----------------------------------------------------------------------------
F test that all u_i=0:    F(1229, 21 020) =    30.11      Prob > F = 0.0000


. xtreg ltrade custrict ldist lrgdp lrgdppc comlang border regional landl island l
> areap comcol curcol colony comctry y1949-y1997 if colony==1, fe i(pairid)


Fixed-effects (within) regression            Number of obs      =     4610
Group variable (i) : pairid                  Number of groups   =      128

R-sq:  within  = 0.4792                       Obs per group: min =        1
       between = 0.5162                                      avg =     36.0
       overall = 0.4936                                      max =       50

                           F(54,4428)       =    75.46
corr(u_i, Xb)  = -0.7213                    Prob > F         =   0.0000


-----------------------------------------------------------------------------
     ltrade |    Coef.   Std. Err.     t    P>|t|    [95% Conf. Interval]
------------+----------------------------------------------------------------
   custrict |  .6824098    .044305    15.40   0.000    .5955498    .7692697
      ldist |  (dropped)
      lrgdp |  1.372198   .0676348    20.29   0.000      1.2396    1.504796
    lrgdppc |  -.2795984   .0673283    -4.15   0.000   -.4115954   -.1476014
    comlang |  (dropped)
     border |  (dropped)
   regional |  1.068837   .0944136    11.32   0.000    .8837391    1.253935
      landl |  (dropped)
     island |  (dropped)
     lareap |  (dropped)
     comcol |  (dropped)
     curcol |  .2573035   .0431922     5.96   0.000    .1726251    .3419819
     colony |  (dropped)
    comctry |  (dropped)
      y1949 |  .1712368   .3226196     0.53   0.596   -.4612589    .8037325
      y1950 |  -.6425738    .255189    -2.52   0.012   -1.142872   -.1422757
      y1951 |  -.8089144   .2549835    -3.17   0.002    -1.30881   -.3090193
      y1952 |  -.8526237   .2547134    -3.35   0.001   -1.351989   -.3532581
      y1953 |  -.8529077   .2537999    -3.36   0.001   -1.350482   -.3553331
      y1954 |  -.9718385    .253735    -3.83   0.000   -1.469286   -.4743912
      y1955 |  -.9807343    .253376    -3.87   0.000   -1.477478   -.4839908
      y1956 |  -1.044478   .2532997    -4.12   0.000   -1.541073   -.5478844
      y1957 |  -1.097843   .2538253    -4.33   0.000   -1.595468   -.6002189
      y1958 |  -1.210448   .2532982    -4.78   0.000   -1.707039   -.7138568
      y1959 |  -1.236703   .2530921    -4.89   0.000    -1.73289   -.7405159
      y1960 |  -1.319723   .2493072    -5.29   0.000   -1.808489   -.8309561
      y1961 |  -1.349841   .2497949    -5.40   0.000   -1.839564   -.8601181
      y1962 |  -1.426941   .2502274    -5.70   0.000   -1.917512   -.9363705
      y1963 |  -1.434012   .2508213    -5.72   0.000   -1.925747   -.9422769
      y1964 |  -1.474357   .2512983    -5.87   0.000   -1.967028   -.9816871
      y1965 |  -1.510538   .2520087    -5.99   0.000   -2.004601   -1.016475
      y1966 |  -1.521023   .2523014    -6.03   0.000    -2.01566   -1.026386
      y1967 |  -1.595844   .2532906    -6.30   0.000   -2.092421   -1.099268
      y1968 |  -1.689834   .2541331    -6.65   0.000   -2.188062   -1.191606
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     y1969 |  -1.794575  .2549609   -7.04  0.000    -2.294426  -1.294724
     y1970 |  -1.863862  .2554068   -7.30  0.000    -2.364587  -1.363137
     y1971 |  -1.905739  .2564036   -7.43  0.000    -2.408418   -1.40306
     y1972 |  -1.898158  .2570426   -7.38  0.000    -2.402089  -1.394226
     y1973 |  -1.882283   .258284   -7.29  0.000    -2.388648  -1.375917
     y1974 |  -1.801654  .2589727   -6.96  0.000     -2.30937  -1.293938
     y1975 |  -1.760911     .25918   -6.79  0.000    -2.269034  -1.252789
     y1976 |  -1.856322  .2599543   -7.14  0.000    -2.365962  -1.346681
     y1977 |  -1.829422  .2611684   -7.00  0.000    -2.341443  -1.317402
     y1978 |  -1.919759  .2623492   -7.32  0.000    -2.434095  -1.405424
     y1979 |  -1.935298  .2633521   -7.35  0.000      -2.4516  -1.418996
     y1980 |  -1.927222  .2636467   -7.31  0.000    -2.444102  -1.410343
     y1981 |  -2.175589  .2640425   -8.24  0.000    -2.693244  -1.657933
     y1982 |  -2.279582  .2642837   -8.63  0.000     -2.79771  -1.761453
     y1983 |  -2.417149  .2647481   -9.13  0.000    -2.936188   -1.89811
     y1984 |  -2.531442  .2656016   -9.53  0.000    -3.052154  -2.010731
     y1985 |  -2.653753  .2665072   -9.96  0.000     -3.17624  -2.131265
     y1986 |  -2.724937  .2675233  -10.19  0.000    -3.249416  -2.200457
     y1987 |  -2.709566  .2685403  -10.09  0.000     -3.23604  -2.183093
     y1988 |  -2.786245  .2698025  -10.33  0.000    -3.315193  -2.257297
     y1989 |   -2.89789  .2708596  -10.70  0.000     -3.42891   -2.36687
     y1990 |  -2.858197  .2716996  -10.52  0.000    -3.390864   -2.32553
     y1991 |  -2.927347  .2720727  -10.76  0.000    -3.460745  -2.393948
     y1992 |  -2.927941  .2727964  -10.73  0.000    -3.462758  -2.393123
     y1993 |   -3.04241  .2735611  -11.12  0.000    -3.578727  -2.506094
     y1994 |  -3.118033  .2746777  -11.35  0.000    -3.656539  -2.579528
     y1995 |  -3.002378  .2758414  -10.88  0.000    -3.543165  -2.461591
     y1996 |   -3.05275   .276639  -11.04  0.000    -3.595101  -2.510399
     y1997 |  -3.057762  .2777179  -11.01  0.000    -3.602228  -2.513296
     _cons |  -47.48807  2.348406  -20.22  0.000    -52.09212  -42.88402
-------------+----------------------------------------------------------------
   sigma_u |  2.0682713
   sigma_e |  .57940581
       rho |  .92723221   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:    F(127, 4428) =  100.29      Prob > F = 0.0000


. xtreg ltrade custrict ldist lrgdp lrgdppc comlang border regional landl island l
> areap comcol curcol colony comctry y1949-y1997 if (comcol==1|colony==1), fe i(pa
> irid)


Fixed-effects (within) regression            Number of obs      =     26911
Group variable (i) : pairid                  Number of groups   =      1358

R-sq:  within  = 0.0648                       Obs per group: min =         1
       between = 0.4336                                      avg =      19.8
       overall = 0.4395                                      max =        50

                            F(54,25499)     =     32.73
corr(u_i, Xb)  = 0.0507                        Prob > F       =     0.0000


------------------------------------------------------------------------------
    ltrade |     Coef.   Std. Err.     t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
  custrict |  .2399526  .0583213    4.11   0.000     .1256396   .3542657
     ldist |  (dropped)
     lrgdp |  .7695777  .0529365   14.54   0.000      .665819   .8733363
   lrgdppc |  .0849338  .0500005    1.70   0.089    -.0130701   .1829376
   comlang |  (dropped)
    border |  (dropped)
  regional |  .6532446  .1045988    6.25   0.000     .4482251   .8582642
     landl |  (dropped)
    island |  (dropped)
    lareap |  (dropped)
    comcol |  (dropped)
    curcol | -.2667271  .0939192   -2.84   0.005    -.4508142  -.0826401
    colony |  (dropped)
   comctry |  (dropped)
     y1949 |  .1585687  .7607245    0.21   0.835    -1.332495   1.649632
     y1950 |  .0131948  .5849164    0.02   0.982    -1.133275   1.159664
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     y1951 |  -.0358584  .5848771   -0.06  0.951   -1.182251   1.110534
     y1952 |  -.0847101  .5832027   -0.15  0.885   -1.227821   1.058401
     y1953 |  -.0430734  .5810289   -0.07  0.941   -1.181923   1.095776
     y1954 |  -.2540133  .5807633   -0.44  0.662   -1.392342   .8843158
     y1955 |  -.2506371  .5803156   -0.43  0.666   -1.388089   .8868145
     y1956 |  -.3497732  .5781763   -0.60  0.545   -1.483032   .7834853
     y1957 |  -.3151885  .5789342   -0.54  0.586   -1.449933   .8195555
     y1958 |  -.4848163  .5769668   -0.84  0.401   -1.615704   .6460714
     y1959 |  -.5793188  .5776933   -1.00  0.316   -1.711631   .5529929
     y1960 |  -.4976299   .570533   -0.87  0.383   -1.615907   .6206474
     y1961 |  -.5094681  .5707281   -0.89  0.372   -1.628128   .6091914
     y1962 |  -.5649481   .570152   -0.99  0.322   -1.682479   .5525824
     y1963 |  -.6482236  .5697573   -1.14  0.255    -1.76498   .4685331
     y1964 |    -.49215     .5694   -0.86  0.387   -1.608206   .6239064
     y1965 |  -.5642293  .5693652   -0.99  0.322   -1.680218    .551759
     y1966 |  -.6557873  .5689986   -1.15  0.249   -1.771057   .4594824
     y1967 |  -.8180615  .5691145   -1.44  0.151   -1.933558   .2974354
     y1968 |  -.9635689  .5696775   -1.69  0.091   -2.080169   .1530314
     y1969 |  -1.261092  .5689598   -2.22  0.027   -2.376285  -.1458982
     y1970 |  -1.256138  .5690281   -2.21  0.027   -2.371465  -.1408104
     y1971 |  -1.381397  .5693506   -2.43  0.015   -2.497357  -.2654377
     y1972 |  -1.406561  .5694315   -2.47  0.014   -2.522679   -.290443
     y1973 |  -1.347464  .5696264   -2.37  0.018   -2.463964  -.2309636
     y1974 |  -1.288627  .5700201   -2.26  0.024   -2.405899  -.1713552
     y1975 |   -1.32685  .5702102   -2.33  0.020   -2.444494  -.2092052
     y1976 |  -1.517539  .5705434   -2.66  0.008   -2.635836  -.3992413
     y1977 |  -1.503542  .5709376   -2.63  0.008   -2.622612  -.3844716
     y1978 |  -1.573914  .5713959   -2.75  0.006   -2.693882  -.4539455
     y1979 |   -1.51957  .5718176   -2.66  0.008   -2.640365  -.3987755
     y1980 |  -1.574073  .5720814   -2.75  0.006   -2.695385   -.452761
     y1981 |   -1.69196   .572326   -2.96  0.003   -2.813751  -.5701679
     y1982 |  -1.892404  .5725406   -3.31  0.001   -3.014616   -.770192
     y1983 |   -2.10032  .5728686   -3.67  0.000   -3.223175  -.9774651
     y1984 |  -2.220049  .5731364   -3.87  0.000   -3.343429  -1.096669
     y1985 |  -2.258068  .5733987   -3.94  0.000   -3.381962  -1.134174
     y1986 |  -2.386066  .5737144   -4.16  0.000   -3.510579  -1.261553
     y1987 |  -2.360038  .5741262   -4.11  0.000   -3.485358  -1.234718
     y1988 |  -2.407748  .5744825   -4.19  0.000   -3.533767   -1.28173
     y1989 |  -2.404585  .5749223   -4.18  0.000   -3.531466  -1.277705
     y1990 |  -2.382618  .5752649   -4.14  0.000    -3.51017  -1.255066
     y1991 |  -2.211107  .5756949   -3.84  0.000   -3.339502  -1.082712
     y1992 |  -2.338921  .5760675   -4.06  0.000   -3.468046  -1.209796
     y1993 |  -2.400443  .5765711   -4.16  0.000   -3.530555  -1.270331
     y1994 |   -2.38612  .5769323   -4.14  0.000    -3.51694   -1.2553
     y1995 |  -2.268919  .5774717   -3.93  0.000   -3.400797  -1.137042
     y1996 |  -2.180941  .5778953   -3.77  0.000   -3.313648  -1.048233
     y1997 |  -2.223836  .5784864   -3.84  0.000   -3.357702   -1.08997
     _cons |  -25.64124  1.808573  -14.18  0.000   -29.18614  -22.09633
------------+----------------------------------------------------------------
   sigma_u |  3.0585643
   sigma_e |  1.3662682
       rho |  .83365075   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(1 357, 25499) =    35.44      Prob > F = 0.0000

. xtreg ltrade custrict ldist lrgdp lrgdppc comlang border regional landl island l
> areap comcol curcol colony comctry y1949-y1997 if comcol==0, fe i(pairid)

Fixed-effects (within) regression          Number of obs      =    197257
Group variable (i) : pairid                Number of groups   =      9948

R-sq: within  = 0.1502                     Obs per group: min =         1
      between = 0.5786                                    avg =      19.8
      overall = 0.5521                                    max =        50

                              F(54,187255)     =    613.14
corr(u_i, Xb)  = 0.3841                     Prob > F         =    0.0000

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

```
------------+----------------------------------------------------------------
   custrict |  .5195707   .0762238    6.82   0.000    .3701739    .6689676
      ldist |  (dropped)
       lrgdp |  .5185193   .0193361   26.82   0.000     .480621    .5564176
     lrgdppc |  .5050282   .0187761   26.90   0.000    .4682276    .5418289
     comlang |  (dropped)
      border |  (dropped)
    regional |  .9890521   .0483421   20.46   0.000    .8943027    1.083802
       landl |  (dropped)
      island |  (dropped)
      lareap |  (dropped)
      comcol |  (dropped)
      curcol |  .3088995   .0891134    3.47   0.001    .1342393    .4835596
      colony |  (dropped)
      comctry |  (dropped)
       y1949 |  .0208564   .2234216    0.09   0.926   -.4170447    .4587575
       y1950 | -.3592074   .1811276   -1.98   0.047   -.7142133   -.0042016
       y1951 | -.2014885   .1809373   -1.11   0.265   -.5561213    .1531443
       y1952 | -.3203027    .180772   -1.77   0.076   -.6746117    .0340062
       y1953 | -.4346775   .1804681   -2.41   0.016   -.7883908   -.0809641
       y1954 | -.4235644    .180485   -2.35   0.019   -.7773108   -.0698181
       y1955 | -.4421429   .1802922   -2.45   0.014   -.7955114   -.0887745
       y1956 | -.4648661   .1802391   -2.58   0.010   -.8181305   -.1116016
       y1957 | -.4535447   .1803743   -2.51   0.012    -.807074   -.1000153
       y1958 | -.5451434   .1802664   -3.02   0.002   -.8984612   -.1918255
       y1959 |  -.531946   .1803448   -2.95   0.003   -.8854176   -.1784743
       y1960 | -.6015661   .1792079   -3.36   0.001   -.9528094   -.2503228
       y1961 | -.6648859   .1792776   -3.71   0.000   -1.016266    -.313506
       y1962 | -.7079953    .179292   -3.95   0.000   -1.059403   -.3565872
       y1963 | -.6905428   .1793038   -3.85   0.000   -1.041974   -.3391117
       y1964 | -.6712735   .1793043   -3.74   0.000   -1.022706   -.3198412
       y1965 | -.7170875   .1793439   -4.00   0.000   -1.068597   -.3655776
       y1966 | -.7515368    .179359   -4.19   0.000   -1.103076   -.3999973
       y1967 | -.8018348    .179468   -4.47   0.000   -1.153588   -.4500818
       y1968 | -.9233602   .1796152   -5.14   0.000   -1.275402   -.5713186
       y1969 | -1.204517   .1795273   -6.71   0.000   -1.556387   -.8526481
       y1970 | -1.241827   .1796026   -6.91   0.000   -1.593844   -.8898103
       y1971 | -1.262114   .1797161   -7.02   0.000   -1.614353   -.9098746
       y1972 | -1.200879   .1797642   -6.68   0.000   -1.553212   -.8485449
       y1973 | -1.043518   .1798898   -5.80   0.000   -1.396098   -.6909381
       y1974 | -.8435533   .1800555   -4.68   0.000   -1.196458   -.4906488
       y1975 | -.9131113    .180164   -5.07   0.000   -1.266228   -.5599942
       y1976 | -.9577147   .1803391   -5.31   0.000   -1.311175   -.6042543
       y1977 | -.9088535   .1804978   -5.04   0.000   -1.262625   -.5550821
       y1978 |   -.95829   .1806743   -5.30   0.000   -1.312407   -.6041727
       y1979 |  -.953412   .1808305   -5.27   0.000   -1.307836   -.5989884
       y1980 | -.9433522   .1809407   -5.21   0.000   -1.297992   -.5887128
       y1981 | -1.073877   .1810385   -5.93   0.000   -1.428708   -.7190458
       y1982 |  -1.21708   .1811054   -6.72   0.000   -1.572042   -.8621173
       y1983 |  -1.34119   .1811879   -7.40   0.000   -1.696314    -.9860662
       y1984 | -1.393947   .1813358   -7.69   0.000   -1.749361   -1.038533
       y1985 | -1.463675   .1814626   -8.07   0.000   -1.819337   -1.108012
       y1986 | -1.500787   .1816074   -8.26   0.000   -1.856733    -1.14484
       y1987 | -1.490702   .1817611   -8.20   0.000   -1.846949   -1.134454
       y1988 | -1.449768   .1819113   -7.97   0.000    -1.80631   -1.093226
       y1989 | -1.463169   .1820717   -8.04   0.000   -1.820025   -1.106313
       y1990 |  -1.42174   .1822126   -7.80   0.000   -1.778873   -1.064608
       y1991 | -1.474348   .1823757   -8.08   0.000     -1.8318   -1.116896
       y1992 | -1.412701   .1825047   -7.74   0.000   -1.770406   -1.054996
       y1993 | -1.517932   .1826232   -8.31   0.000   -1.875869   -1.159995
       y1994 | -1.428137   .1827414   -7.82   0.000   -1.786306   -1.069968
       y1995 | -1.331738   .1829803   -7.28   0.000   -1.690375   -.9731008
       y1996 | -1.315366   .1831107   -7.18   0.000   -1.674258   -.9564731
       y1997 | -1.298466   .1833016   -7.08   0.000   -1.657733   -.9391993
       _cons | -21.76919   .6812016  -31.96   0.000   -23.10432   -20.43405
------------+----------------------------------------------------------------
     sigma_u |  2.6249294
     sigma_e |  1.2863139
         rho |  .80636267   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

F test that all u_i=0:   F(9947, 187255) =   27.49   Prob > F = 0.0000

. xtreg ltrade custrict ldist lrgdp lrgdppc comlang border regional landl island l
> areap comcol curcol colony comctry y1949-y1997 if colony==0, fe i(pairid)

Fixed-effects (within) regression   Number of obs   =   214948
Group variable (i) : pairid   Number of groups =   11050

R-sq: within = 0.1302   Obs per group: min =   1
       between = 0.5300   avg =   19.5
       overall = 0.5088   max =   50

                               F(53,203845)   =   575.77
corr(u_i, Xb) = 0.3558   Prob > F   =   0.0000

----
    ltrade | Coef. Std. Err.   t   P>|t| [95% Conf. Interval]
-------------+--
   custrict | .5921911 .0598864   9.89 0.000   .4748152   .709567
      ldist | (dropped)
      lrgdp | .4477119 .0187271 23.91 0.000   .4110072   .4844165
    lrgdppc | .5425119 .0181069 29.96 0.000   .5070229   .5780009
    comlang | (dropped)
     border | (dropped)
   regional | .8438636 .0465866 18.11 0.000   .7525551   .9351722
      landl | (dropped)
     island | (dropped)
     lareap | (dropped)
     comcol | (dropped)
     curcol | (dropped)
     colony | (dropped)
    comctry | (dropped)
      y1949 | .0281049 .2420957   0.12 0.908   -.4463968   .5026067
      y1950 | -.2586046 .1970134 -1.31 0.189   -.644746   .1275368
      y1951 | -.0913233 .1968299 -0.46 0.643   -.4771052   .2944585
      y1952 | -.2071588 .1966512 -1.05 0.292   -.5925903   .1782727
      y1953 | -.3165362 .1963404 -1.61 0.107   -.7013586   .0682861
      y1954 | -.3083425 .1963544 -1.57 0.116   -.6931922   .0765073
      y1955 | -.3243959 .1961673 -1.65 0.098   -.708879   .0600872
      y1956 | -.3424901   .196085 -1.75 0.081   -.7268118   .0418317
      y1957 | -.3234048 .1962194 -1.65 0.099   -.7079901   .0611804
      y1958 | -.4127958 .1960906 -2.11 0.035   -.7971285 -.0284631
      y1959 | -.4037072 .1961839 -2.06 0.040   -.7882229 -.0191915
      y1960 | -.4484646   .195026 -2.30 0.021   -.8307107 -.0662185
      y1961 | -.5057452 .1950901 -2.59 0.010   -.8881171 -.1233733
      y1962 | -.5393841 .1950785 -2.76 0.006   -.9217332 -.1570351
      y1963 | -.5278508 .1950717 -2.71 0.007   -.9101866 -.1455151
      y1964 | -.4855246 .1950568 -2.49 0.013   -.8678311   -.103218
      y1965 | -.5299637 .1950833 -2.72 0.007   -.9123222 -.1476053
      y1966 | -.5639838 .1950762 -2.89 0.004   -.9463284 -.1816392
      y1967 | -.6190313 .1951632 -3.17 0.002   -1.001546 -.2365162
      y1968 | -.746729 .1953067 -3.82 0.000   -1.129525 -.3639326
      y1969 | -1.028271 .1951953 -5.27 0.000   -1.410849 -.6456929
      y1970 | -1.05175   .195259 -5.39 0.000   -1.434453 -.6690475
      y1971 | -1.082507 .1953623 -5.54 0.000   -1.465412 -.6996018
      y1972 | -1.031542 .1954011 -5.28 0.000   -1.414524 -.6485609
      y1973 | -.8757484 .1955071 -4.48 0.000   -1.258937 -.4925593
      y1974 | -.6845267 .1956575 -3.50 0.000   -1.068011   -.3010428
      y1975 | -.749947   .195753 -3.83 0.000   -1.133618 -.3662759
      y1976 | -.8063386 .1959062 -4.12 0.000   -1.19031 -.4223672
      y1977 | -.756866 .1960488 -3.86 0.000   -1.141117 -.3726152
      y1978 | -.8022413 .1962082 -4.09 0.000   -1.186805 -.4176779
      y1979 | -.7853074 .1963505 -4.00 0.000   -1.17015 -.4004652
      y1980 | -.7802964 .1964522 -3.97 0.000   -1.165338 -.3952549
      y1981 | -.900592 .1965419 -4.58 0.000   -1.285809 -.5153748
      y1982 | -1.049659 .1966056 -5.34 0.000   -1.435001 -.6643172
      y1983 | -1.181658   .196686 -6.01 0.000   -1.567158 -.7961583
      y1984 | -1.237829 .1968154 -6.29 0.000   -1.623582 -.8520753
      y1985 | -1.297346 .1969257 -6.59 0.000   -1.683315 -.9113763
      y1986 | -1.341804 .1970525 -6.81 0.000   -1.728022 -.9555857

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  y1987 |  -1.326997  .1971927  -6.73  0.000   -1.71349  -.9405043
  y1988 |  -1.291935  .1973259  -6.55  0.000  -1.678689  -.9051806
  y1989 |  -1.295795  .1974726  -6.56  0.000  -1.682837  -.9087538
  y1990 |  -1.254089  .1975991  -6.35  0.000  -1.641379  -.8667998
  y1991 |  -1.271579  .1977493  -6.43  0.000  -1.659163  -.8839949
  y1992 |   -1.23066  .1978693  -6.22  0.000  -1.618479  -.8428407
  y1993 |  -1.325467  .1979865  -6.69  0.000  -1.713516  -.9374182
  y1994 |   -1.23617  .1980938  -6.24  0.000  -1.624429  -.8479108
  y1995 |  -1.133388  .1983058  -5.72  0.000  -1.522063  -.7447138
  y1996 |    -1.103  .198427  -5.56  0.000  -1.491912  -.7140878
  y1997 |  -1.088604  .1986022  -5.48  0.000  -1.477859  -.6993483
   _cons |  -19.18697  .6611359  -29.02  0.000  -20.48278  -17.89116
------------+----------------------------------------------------------------
 sigma_u |  2.749241
 sigma_e |  1.3223485
     rho |  .81211794   (fraction of variance due to u_i)
-------------------------------------------------------------------------------
F test that all u_i=0:    F(11049, 203845) =   27.48     Prob > F = 0.0000

. xtreg ltrade custrict ldist lrgdp lrgdppc comlang border regional landl island l
> areap comcol curcol colony comctry y1949-y1997 if (comcol==0&colony==0), fe i(pa
> irid)


Fixed-effects (within) regression          Number of obs     =    192647
Group variable (i) : pairid                Number of groups  =      9820

R-sq: within  = 0.1481                     Obs per group: min =         1
      between = 0.5715                                   avg =      19.6
      overall = 0.5456                                   max =        50

                          F(53,182774)     =    599.39
corr(u_i, Xb) = 0.3843                    Prob > F         =    0.0000


-------------------------------------------------------------------------------
  ltrade |    Coef.   Std. Err.     t    P>|t|    [95% Conf. Interval]
------------+----------------------------------------------------------------
 custrict |  .2967023  .1370354    2.17  0.030    .028116   .5652886
    ldist |  (dropped)
    lrgdp |   .500596  .0197476   25.35  0.000   .4618911    .539301
  lrgdppc |  .5214688  .0191566   27.22  0.000   .4839223   .5590154
  comlang |  (dropped)
   border |  (dropped)
 regional |   .992011  .0501646   19.78  0.000   .8936896   1.090332
    landl |  (dropped)
   island |  (dropped)
   lareap |  (dropped)
   comcol |  (dropped)
   curcol |  (dropped)
   colony |  (dropped)
  comctry |  (dropped)
   y1949 |   .022141   .237738    0.09  0.926    -.44382   .4881019
   y1950 |  -.3114456  .1936012   -1.61  0.108   -.6908995   .0680084
   y1951 |  -.1422138   .193409   -0.74  0.462   -.5212909   .2368633
   y1952 |  -.2640003  .1932423   -1.37  0.172   -.6427509   .1147502
   y1953 |  -.3832893  .1929403   -1.99  0.047   -.7614477  -.0051308
   y1954 |  -.3675931  .1929608   -1.91  0.057   -.7457917   .0106055
   y1955 |  -.3870038  .1927678   -2.01  0.045   -.7648243  -.0091832
   y1956 |  -.4086945  .1927158   -2.12  0.034    -.786413   -.030976
   y1957 |  -.3955955   .192853   -2.05  0.040   -.7735829  -.0176081
   y1958 |  -.4870257  .1927479   -2.53  0.012   -.8648071  -.1092444
   y1959 |  -.4722614  .1928326   -2.45  0.014   -.8502088   -.094314
   y1960 |   -.541497  .1917036   -2.82  0.005   -.9172317  -.1657623
   y1961 |  -.6064631  .1917734   -3.16  0.002   -.9823345  -.2305917
   y1962 |  -.6491569  .1917873   -3.38  0.001   -1.025056  -.2732582
   y1963 |  -.6315664  .1917976   -3.29  0.001   -1.007485  -.2556475
   y1964 |  -.6111052  .1917989   -3.19  0.001   -.9870265  -.2351838
   y1965 |  -.6576396  .1918367   -3.43  0.001   -1.033635  -.2816442
   y1966 |  -.6928403  .1918522   -3.61  0.000   -1.068866  -.3168144
   y1967 |  -.7422872  .1919564   -3.87  0.000   -1.118517  -.3660572
   y1968 |  -.8648629  .1921037   -4.50  0.000   -1.241382   -.488344
```

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       y1969 |  -1.150493   .1920134    -5.99   0.000    -1.526835   -.7741511
       y1970 |   -1.18664    .19209     -6.18   0.000    -1.563132   -.8101478
       y1971 |  -1.206336   .1922006    -6.28   0.000    -1.583045    -.829627
       y1972 |  -1.143614   .1922479    -5.95   0.000    -1.520415   -.7668122
       y1973 |  -.9829128   .1923718    -5.11   0.000    -1.359957   -.6058685
       y1974 |  -.7800882   .1925373    -4.05   0.000    -1.157457   -.4027195
       y1975 |  -.8520848   .1926468    -4.42   0.000    -1.229668   -.4745016
       y1976 |   -.895634   .1928215    -4.64   0.000     -1.27356   -.5177082
       y1977 |  -.8460043   .1929782    -4.38   0.000    -1.224237   -.4677715
       y1978 |  -.8943292   .1931529    -4.63   0.000    -1.272904   -.5157539
       y1979 |  -.8888467   .1933077    -4.60   0.000    -1.267725   -.5099681
       y1980 |  -.8786388   .1934188    -4.54   0.000    -1.257735   -.4995424
       y1981 |  -1.006288   .1935171    -5.20   0.000    -1.385577   -.6269987
       y1982 |  -1.150223   .1935846    -5.94   0.000    -1.529645   -.7708021
       y1983 |  -1.273966   .1936665    -6.58   0.000    -1.653548   -.8943841
       y1984 |  -1.325239   .1938132    -6.84   0.000    -1.705108   -.9453693
       y1985 |  -1.393605   .1939391    -7.19   0.000    -1.773721   -1.013489
       y1986 |   -1.42987   .1940817    -7.37   0.000    -1.810266   -1.049475
       y1987 |  -1.419763   .1942338    -7.31   0.000    -1.800457   -1.039069
       y1988 |  -1.376097   .1943815    -7.08   0.000     -1.75708   -.9951133
       y1989 |  -1.387195   .1945405    -7.13   0.000     -1.76849     -1.0059
       y1990 |  -1.345517   .1946804    -6.91   0.000    -1.727086   -.9639484
       y1991 |  -1.397458   .1948433    -7.17   0.000    -1.779347    -1.01557
       y1992 |  -1.334242   .1949717    -6.84   0.000    -1.716382   -.9521015
       y1993 |  -1.438851   .1950899    -7.38   0.000    -1.821223    -1.05648
       y1994 |  -1.345823   .1952061    -6.89   0.000    -1.728423   -.9632235
       y1995 |  -1.249582   .1954427    -6.39   0.000    -1.632645   -.8665193
       y1996 |  -1.231938   .1955716    -6.30   0.000    -1.615254    -.848622
       y1997 |  -1.214436   .195762     -6.20   0.000    -1.598125   -.8307467
       _cons |  -21.29532   .6971912   -30.54   0.000     -22.6618   -19.92884
-------------+----------------------------------------------------------------
     sigma_u |  2.6269524
     sigma_e |  1.2985397
         rho |  .80363472   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(9819, 182774) =    26.83        Prob > F = 0.0000

. *
. * Clean up and Close down
. *
. drop _all

. set more 0

. set mem 1m
(1024k)

. log close
      log:  C:\res\cuts\progs\bomb.log
 log type:  text
 closed on:  15 May 2002, 19:47:46
------------------------------------------------------------------------------
```