r(111);

r(301);

12 . estimates store fixed

last estimation results not found, nothing to store

Copyright 1985-2013 StataCorp LP StataCorp 4905 Lakeway Drive MP - Parallel Edition College Station, Texas 77845 USA 800-STATA-PC 979-696-4600 979-696-4601 (fax) 3-user 8-core Stata network perpetual license: Serial number: 501306208483 Licensed to: IDRE-UCLA IDRE-UCLA Notes: 1. (/v# option or -set maxvar-) 5000 maximum variables 1 . use "C:\Users\pddes\Desktop\ae project 2\WHO Africa Panel Data.dta" 2 . drop country code doctors 3 . save "C:\Users\pddes\Desktop\ae project 2\WHO Africa Panel Data.dta", replace file C:\Users\pddes\Desktop\ae project 2\WHO Africa Panel Data.dta saved 4 . keep doctors variable doctors not found r(111); 5 . do "C:\Users\pddes\Desktop\ae project 2\WHO Africa Panel Data.do" 6 . *cleaning data 7 . drop region doctors life exp60 age519thinness age519obesity hospitals une infant une life une in > ne literacy une school variable region not found r(111); end of do-file r(111); 8 . xtset country_num year panel variable: country_num (strongly balanced)
time variable: year, 2000 to 2016
delta: 1 unit 9. 10 . xtreg life_expect adult_mortality infant_mort age14mort alcohol bmi hepatitis measles polio diph > doctors gni capita gghed che gdp une pop une hiv une gni une edu spend i.year, fe variable doctors not found

```
Saturday April 16 19:23:07 2022 Page 2
13 .
14 . xtreg life_expect adult_mortality infant_mort age14mort alcohol bmi hepatitis measles polio diph
   > doctors gni_capita gghed che_gdp une_pop une_hiv une_gni une_edu_spend i.year, re
  variable doctors not found
  r(111);
16 . estimates store random
  last estimation results not found, nothing to store
18 . hausman fixed random, sigmamore
   estimation result fixed not found
  <u>r(111);</u>
19 . xtset country_num year
```

panel variable: country_num (strongly balanced)
time variable: year, 2000 to 2016
delta: 1 unit

21 . xtreg life_expect adult_mortality infant_mort age14mort alcohol bmi hepatitis measles polio diph > gni_capita gghed che_gdp une_pop une_hiv une_gni une_edu_spend i.year, fe

Fixed-effects (within) regression Group variable: country_num	Number of obs	=	890 111
R-sq: within = 0.9797 between = 0.9308 overall = 0.9262	Obs per group: min avg max	=	1 8.0 14
corr(u_i, Xb) = 0.7189	F(30,749) Prob > F	=	1203.04 0.0000

life_expect	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
adult_mortality	038614	.0005538	-69.72	0.000	0397012	0375268
infant_mort	-42.77758	4.505838	-9.49	0.000	-51.62315	-33.932
age14mort	-152.8186	16.16631	-9.45	0.000	-184.5553	-121.0819
alcohol	.0137867	.0109787	1.26	0.210	007766	.0353393
bmi	2467772	.0776584	-3.18	0.002	3992313	0943232
hepatitis	0014865	.0009053	-1.64	0.101	0032638	.0002907
measles	.0100405	.0024414	4.11	0.000	.0052477	.0148332
polio	.0011732	.0030074	0.39	0.697	0047307	.0070771
diphtheria	0048754	.0032838	-1.48	0.138	0113219	.0015711
basic_water	.0041906	.0058338	0.72	0.473	007262	.0156432
gni_capita	3.42e-06	.0000225	0.15	0.879	0000408	.0000476
gghed	0826417	.0305164	-2.71	0.007	1425495	0227338
che_gdp	045382	.0157202	-2.89	0.004	0762429	014521
une_pop	-3.73e-06	3.54e-06	-1.06	0.292	0000107	3.21e-06
une_hiv	0570253	.024641	-2.31	0.021	1053988	0086517
une_gni	9.48e-06	.0000209	0.45	0.650	0000315	.0000505
une_edu_spend	.0430417	.0131566	3.27	0.001	.0172135	.06887
year						
2001	.2582378	.0540812	4.77	0.000	.1520689	.3644066
2002	.3151027	.0548009	5.75	0.000	.2075211	.4226842
2003	.3997189	.058494	6.83	0.000	.2848872	.5145505
2004	.5701967	.0621744	9.17	0.000	.4481398	.6922536
2005	.736396	.0696175	10.58	0.000	.5997273	.8730647
2006	.9053688	.0763755	11.85	0.000	.7554333	1.055304
2007	1.046454	.0820833	12.75	0.000	.8853131	1.207595
2008	1.169585	.0890231	13.14	0.000	.994821	1.34435
2009	1.32254	.0968737	13.65	0.000	1.132364	1.512717
2010	1.448559	.1030297	14.06	0.000	1.246298	1.65082

2011 2012 2013	1.623439 1.74626 1.920876	.1109539 .1170058 .1245512	14.63 14.92 15.42	0.000 0.000 0.000	1.405622 1.516562 1.676365	1.841257 1.975958 2.165387
_cons	82.881	1.905433	43.50	0.000	79.14038	86.62163
sigma_u sigma_e rho	3.4724111 .22636677 .99576824	(fraction	of varia	nce due t	o u_i)	

F test that all $u_i=0$: F(110, 749) = 161.40 Prob > F = 0.0000

22 .

23 . estimates store fixed

24 .

25 . xtreg life_expect adult_mortality infant_mort age14mort alcohol bmi hepatitis measles polio diph
> gni_capita gghed che_gdp une_pop une_hiv une_gni une_edu_spend i.year, re

Random-effects GLS regression Group variable: country_num	Number of obs = 890 Number of groups = 111
R-sq: within = 0.9756 between = 0.9716 overall = 0.9735	Obs per group: min = 1
corr(u_i, X) = 0 (assumed)	Wald chi2(30) = 31370.35 Prob > chi2 = 0.0000

life_expect	Coef.	Std. Err.	Z	P> z	[95% Conf.	Interval]
adult mortality	0396134	.0006323	-62.65	0.000	0408527	0383741
infant mort	-57.91783	4.652903	-12.45	0.000	-67.03735	-48.7983
age14mort	-156.8811	18.0618	-8.69	0.000	-192.2816	-121.4806
alcohol	.0075592	.012087	0.63	0.532	0161309	.0312492
bmi	.2491593	.0595902	4.18	0.000	.1323646	.365954
hepatitis	0008642	.0010513	-0.82	0.411	0029248	.0011963
measles	.0102684	.0028495	3.60	0.000	.0046835	.0158533
polio	001255	.0035194	-0.36	0.721	0081529	.005643
diphtheria	0049315	.003838	-1.28	0.199	0124538	.0025909
basic water	.0216604	.0058649	3.69	0.000	.0101653	.0331555
gni capita	.0000324	.0000249	1.30	0.194	0000165	.0000812
gghed	.0705717	.0331599	2.13	0.033	.0055795	.1355639
che gdp	0413348	.0176666	-2.34	0.019	0759608	0067089
une pop	3.78e-07	2.17e-06	0.17	0.862	-3.88e-06	4.63e-06
une hiv	0650407	.0206081	-3.16	0.002	1054319	0246495
une gni	.0000248	.0000238	1.04	0.298	0000219	.0000716
une_edu_spend	.0241497	.0151516	1.59	0.111	005547	.0538464
year						
2001	.1509906	.0628093	2.40	0.016	.0278867	.2740946
2002	.1255386	.0618346	2.03	0.042	.004345	.2467322
2003	.1182394	.0630286	1.88	0.061	0052944	.2417732
2004	.1872846	.0631441	2.97	0.003	.0635244	.3110447
2005	.2454835	.0670738	3.66	0.000	.1140214	.3769457
2006	.2974137	.0693341	4.29	0.000	.1615214	.433306
2007	.3460705	.0706976	4.90	0.000	.2075058	.4846353
2008	.3635465	.0730178	4.98	0.000	.2204343	.5066586
2009	.4079732	.0765676	5.33	0.000	.2579035	.558043
2010	.445606	.0790484	5.64	0.000	.2906739	.6005381
2011	.5232636	.082489	6.34	0.000	.3615882	.6849391
2012	.5683583	.0854594	6.65	0.000	.400861	.7358556
2013	. 646044	.0894465	7.22	0.000	.4707322	.8213559
_cons	69.72225	1.408661	49.50	0.000	66.96133	72.48318
	I					

 sigma_u
 1.0611028

 sigma_e
 .22636677

 rho
 .95647066

rho | .95647066 (fraction of variance due to u_i)

26

27 . estimates store random

28

29 . hausman fixed random, sigmamore

Note: the rank of the differenced variance matrix (13) does not equal the number of coefficients be sure this is what you expect, or there may be problems computing the test. Examine the estimators for anything unexpected and possibly consider scaling your variables so that the on a similar scale.

	Coeffi	cients				
	(b)	(B)	(b-B)	sqrt(diag(V b-V B))		
	fixed	random	Difference	S.E.		
adult mort~y	038614	0396134	.0009994	.0001549		
infant mort	-42.77758	-57.91783	15.14025	2.530458		
age14mort	-152.8186	-156.8811	4.062509	5.906473		
alcohol	.0137867	.0075592	.0062275	.0045218		
bmi	2467772	.2491593	4959365	.069152		
hepatitis	0014865	0008642	0006223	.0001649		
measles	.0100405	.0102684	0002279	.0003405		
polio	.0011732	001255	.0024281	.0003323		
diphtheria	0048754	0049315	.0000561	.0004112		
basic water	.0041906	.0216604	0174698	.0035535		
gni capita	3.42e-06	.0000324	0000289	8.87e-06		
gahed	0826417	.0705717	1532134	.0136807		
che gdp	045382	0413348	0040471	.0054177		
une pop	-3.73e-06	3.78e-07	-4.11e-06	3.54e-06		
une hiv	0570253	0650407	.0080155	.0203534		
une gni	9.48e-06	.0000248	0000154	5.87e-06		
une edu sp~d	.0430417	.0241497	.018892	.0030986		
2001bn.year	.2582378	.1509906	.1072472	.009811		
2002.year	.3151027	.1255386	.189564	.0180557		
2003.vear	.3997189	.1182394	.2814794	.0274782		
2004.year	.5701967	.1872846	.3829121	.0367985		
2005.year	.736396	.2454835	.4909124	.0468808		
2006.year	.9053688	.2974137	.6079551	.0570327		
2007.year	1.046454	.3460705	.7003833	.0656621		
2008.year	1.169585	.3635465	.8060389	.0749585		
2009.year	1.32254	.4079732	.9145671	.0842869		
2010.year	1.448559	.445606	1.002953	.0917528		
2011.year	1.623439	.5232636	1.100176	.1010235		
2012.year	1.74626	.5683583	1.177902	.1077641		
2013.year	1.920876	.646044	1.274832	.1159058		

b = consistent under Ho and Ha; obtained from xtreg B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

 $chi2(13) = (b-B)'[(V_b-V_B)^(-1)](b-B)$

= 238.87

Prob>chi2 = **0.0000**

30 . xtreg life expect adult mortality infant mort age14mort alcohol bmi hepatitis measles polio diph > gni_capita gghed che_gdp une_pop une_hiv une_gni une_edu_spend i.year, fe

Number of obs = 890 Number of groups = 111 Fixed-effects (within) regression Group variable: country num Obs per group: min = avg = max = R-sq: within = 0.97978.0 between = **0.9308** overall = **0.9262** F(30,749) = 1203.04 Prob > F = 0.0000 $corr(u_i, Xb) = 0.7189$

life_expect	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
adult_mortality	038614	.0005538	-69.72	0.000	0397012	0375268
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age14mort	-152.8186	16.16631	-9.45	0.000	-184.5553	-121.0819
alcohol	.0137867	.0109787	1.26	0.210	007766	.0353393
bmi	2467772	.0776584	-3.18	0.002	3992313	0943232
hepatitis	0014865	.0009053	-1.64	0.101	0032638	.0002907
measles	.0100405	.0024414	4.11	0.000	.0052477	.0148332
polio	.0011732	.0030074	0.39	0.697	0047307	.0070771
diphtheria	0048754	.0032838	-1.48	0.138	0113219	.0015711
basic_water	.0041906	.0058338	0.72	0.473	007262	.0156432
gni_capita	3.42e-06	.0000225	0.15	0.879	0000408	.0000476
gghed	0826417	.0305164	-2.71	0.007	1425495	0227338
che_gdp	045382	.0157202	-2.89	0.004	0762429	014521
une_pop	-3.73e-06	3.54e-06	-1.06	0.292	0000107	3.21e-06
une hiv	0570253	.024641	-2.31	0.021	1053988	0086517
une gni	9.48e-06	.0000209	0.45	0.650	0000315	.0000505
une edu spend	.0430417	.0131566	3.27	0.001	.0172135	.06887
year 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013	.2582378 .3151027 .3997189 .5701967 .736396 .9053688 1.046454 1.169585 1.32254 1.448559 1.623439 1.74626 1.920876	.0540812 .0548009 .058494 .0621744 .0696175 .0763755 .0820833 .0890231 .0968737 .1030297 .1109539 .1170058	4.77 5.75 6.83 9.17 10.58 11.85 12.75 13.14 13.65 14.06 14.63 14.92 15.42	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	.1520689 .2075211 .2848872 .4481398 .5997273 .7554333 .8853131 .994821 1.132364 1.246298 1.405622 1.516562 1.676365	.3644066 .4226842 .5145505 .6922536 .8730647 1.055304 1.207595 1.34435 1.512717 1.65082 1.841257 1.975958 2.165387
_cons	82.881	1.905433	43.50	0.000	79.14038	86.62163
sigma_u sigma_e rho	3.4724111 .22636677 .99576824	(fraction	of varia	nce due t	o u_i)	

F test that all u i=0: F(110, 749) = 161.40 Prob > F = 0.0000

31 . outreg2 using test.doc, append ctitle(Main Model) test.doc

dir : seeout

32 . xtreg life_expect adult_mortality infant_mort age14mort alcohol bmi hepatitis measles polio diph > gni_capita gghed che_gdp une_pop une_hiv une_gni une_edu_spend i.year, re

Number of obs = 890 Number of groups = 111 Random-effects GLS regression Group variable: country num R-sq: within = 0.9756Obs per group: min = min = avg = max = 8.0 avg = between = 0.9716overall = 0.973514 Wald chi2(30) = 31370.35 Prob > chi2 = 0.0000 $corr(u_i, X) = 0$ (assumed)

infant_mort agel4mort -156.8811 18.0618 -8.69 0.000 -67.03735 -48.798 agel4mort -156.8811 18.0618 -8.69 0.000 -192.2816 -121.480 bmi							
infant_mort agel4mort alcohort	life_expect	Coef.	Std. Err.	Z	P> z	[95% Conf.	<pre>Interval]</pre>
agel4mort -156,8811 18.0618 -8.69 0.000 -192.2816 -121.480		0396134	.0006323			0408527	0383741
Alcohol		1					-48.7983
hepatitis	age14mort	1					-121.4806
hepatitis 0008642 .0010513 -0.82 0.411 0029248 .001196 measles .0102684 .0028495 3.60 0.000 .0046835 .015853 polio 001255 .0035194 -0.36 0.721 -0.081529 .005644 diphtheria 0049315 .003838 -1.28 0.199 0124538 .002590 basic_water .0216604 .0058649 3.69 0.000 .0101653 .033155 gni_capita .0000324 .0000249 1.30 0.194 -0000165 .00081 che_gdp .075717 .0331599 2.13 0.033 .0055795 .135563 che_gdp .0413348 .0176666 -2.34 0.019 -0.759608 -0.06708 une_pop 3.78e-07 2.17e-06 0.17 0.862 -3.88e-06 4.63e-0 une_du_spend .000248 .000238 1.04 0.298 0000219 .00071 une_du_spend .0241497 .0151516 <th< td=""><td>alcohol</td><td>1</td><td></td><td></td><td></td><td></td><td>.0312492</td></th<>	alcohol	1					.0312492
measles polio		1					.365954
Dolio 001255	-	1					
diphtheria basic_water gni_capita 0049315 .0216604 .003838 .0058649 -1.28 3.69 .0000 0.199 .0010653 0124538 .033155 .002590 .00101653 gghed che_gdp une_pop .000324 .0705717 .0331599 .0331599 2.13 .0033 .0055795 .035563 .006708 .006708 une_pop 3.78e-07 2.17e-06 .017 0.17 .0862 -3.88e-06 .3.88e-06 4.63e-07 une_hiv une_gni une_edu_spend .0000248 .0000238 .0002 .026081 -3.16 .0002 .1054319 .0000219 .0024649 year 2001 2002 .1509906 .0628093 2.40 .016 .0278867 .003454 .274094 2002 2003 .1182394 .0630286 1.88 .061 .030286 1.88 .061 .000244 .004345 .246732 .24094 .2004 .004345 .246732 .246732 .2004 .241773 .2004 .1872846 .0631441 .297 .0003 .0635244 .311044 .311044 .2005 .2454835 .0670738 3.66 .0700738 3.66 .0000 .1140214 .376945 .2006 .2974137 .369341 .0693341 .297 .0000 .1615214 .43330 .2007 .3460705 .0706976 .0706		1					.0158533
basic_water gni_capita	-						
gni_capita	-						
gghed che_gdp	_						
che_gdp une_pop une_pop une_hiv une_gni une_edu_spend 0413348 3.78e-07 0.176666 2.17e-06 0.17 0.862 -3.88e-06 -3.88e-06 4.63e-0 4.63e-0 une_hiv une_gni une_edu_spend .0000248 .0000238 1.04 0.0298 0000219 000547 .000071 0.053846 year 2001 .1509906 .0628093 0.0628093 2.40 0.016 .0278867 0.04345 .274094 0.053846 2002 .1255386 0.0618346 2.03 0.042 .004345 0.04345 .246732 0.04345 .246732 0.04345 .241773 0.04345 .246732 0.04345 .241773 0.03365 .241773 0.033666 .0631441 0.000 .1872846 0.03341 .0631441 0.000 .140214 0.000 .376945 0.000 .1140214 0.000 .376945 0.000 .1140214 0.000 .376945 0.000 .2075058 0.000 .484635 0.000 .2075058 0.000 .484635 0.000 .2075058 0.0005 0.000 .484635 0.0005 0.000 .2075058 0.0005 0.00							.0000812
une_pop une_hiv une_gni une_edu_spend 3.78e-07 2.17e-06 0.17 0.862 -3.88e-06 4.63e-0 une_hiv une_gni une_edu_spend .00550407 .0206081 -3.16 0.002 1054319 024649 une_edu_spend .0000248 .0000238 1.04 0.298 0000219 .000071 vear 2001 .0241497 .0151516 1.59 0.111 005547 .053846 vear 2002 .1559906 .0628093 2.40 0.016 .0278867 .274094 2003 .1182394 .0630286 1.88 0.061 0052944 .241773 2004 .1872846 .0631441 2.97 0.003 .0635244 .311044 2005 .2454835 .0670738 3.66 0.000 .1140214 .376945 2006 .2974137 .0693341 4.29 0.000 .1615214 .43330 2007 .3460705 .0706976 4.90 0.000 .2204343 .506658 2008 .3635465 .0	2 2						.1355639
une_hiv une_gni une_gni une_edu_spend .0050407 .0206081 -3.16 0.002 1054319 024649 une_gni une_edu_spend .0000248 .0000238 1.04 0.298 0000219 .000071 year .0241497 .0151516 1.59 0.111 005547 .053846 year .001 .0278867 .274094 .2002 .1255386 .0618346 2.03 0.042 .004345 .246732 .2003 .1182394 .0630286 1.88 0.061 0052944 .241773 .2004 .1872846 .0631441 2.97 0.003 .0635244 .311044 .376945 .2005 .2454835 .0670738 3.66 0.000 .1140214 .376945 .36945 .2974137 .0693341 4.29 0.000 .1615214 .43330 .40707 .3460705 .0706976 4.90 0.000 .2075058 .484635 .2008 .3635465 .0730178 4.98 0.000 .2275058 .484635 .2010 .445606 .0790484 5.64		1					0067089
une_gni une_edu_spend .0000248 .0000238 1.04 0.298 0000219 .000071 year .0241497 .0151516 1.59 0.111 005547 .053846 year .0001 .1509906 .0628093 2.40 0.016 .0278867 .274094 2002 .1255386 .0618346 2.03 0.042 .004345 .246732 2003 .1182394 .0630286 1.88 0.061 0052944 .241773 2004 .1872846 .0631441 2.97 0.003 .0635244 .311044 2005 .2454835 .0670738 3.66 0.000 .1140214 .376945 2006 .2974137 .0693341 4.29 0.000 .1615214 .43330 2007 .3460705 .0706976 4.90 0.000 .2075058 .484635 2008 .3635465 .0730178 4.98 0.000 .2204343 .506658 2009 .4079732 .0765676 5.33 <	une_pop	3.78e-07	2.17e-06			-3.88e-06	4.63e-06
une_edu_spend .0241497 .0151516 1.59 0.111 005547 .053846 year 2001 .1509906 .0628093 2.40 0.016 .0278867 .274094 2002 .1255386 .0618346 2.03 0.042 .004345 .246732 2003 .1182394 .0630286 1.88 0.061 0052944 .241773 2004 .1872846 .0631441 2.97 0.003 .0635244 .311044 2005 .2454835 .0670738 3.66 0.000 .1140214 .376945 2006 .2974137 .0693341 4.29 0.000 .1615214 .43330 2007 .3460705 .0706976 4.90 0.000 .2075058 .484635 2008 .3635465 .0730178 4.98 0.000 .2579035 .55804 2010 .445606 .0790484 5.64 0.000 .2906739 .600538 2011 .5232636 .082489 6.34 0.000	une_hiv	0650407	.0206081	-3.16		1054319	0246495
year 2001 .1509906 .0628093 2.40 0.016 .0278867 .274094 2002 .1255386 .0618346 2.03 0.042 .004345 .246732 2003 .1182394 .0630286 1.88 0.061 0052944 .241773 2004 .1872846 .0631441 2.97 0.003 .0635244 .311044 2005 .2454835 .0670738 3.66 0.000 .1140214 .376945 2006 .2974137 .0693341 4.29 0.000 .1615214 .43330 2007 .3460705 .0706976 4.90 0.000 .2075058 .484635 2008 .3635465 .0730178 4.98 0.000 .2204343 .506658 2009 .4079732 .0765676 5.33 0.000 .2579035 .55804 2010 .445606 .0790484 5.64 0.000 .2906739 .600538 2011 .5232636 .082489 6.34 0.000							.0000716
1.509906	une_edu_spend	.0241497	.0151516	1.59	0.111	005547	.0538464
1.509906	vear						
2002		.1509906	.0628093	2.40	0.016	.0278867	.2740946
2003							
2004		1					
2005							
2006							
2007							
2008							
2009		1					
2010							
2011		1					
2012							
2013 .646044 .0894465 7.22 0.000 .4707322 .821355 cons 69.72225 1.408661 49.50 0.000 66.96133 72.4831 sigma_u							
sigma_u 1.0611028 sigma_e .22636677		1					.8213559
sigma_e .22636677	_cons	69.72225	1.408661	49.50	0.000	66.96133	72.48318
sigma_e .22636677	sigma	1.0611028					
(Fraction of Variance due to a_1)			(fraction	of varia	nce due t	o 11 i)	
		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(110001011	or varia.		,	

- 33 . outreg2 using test.doc, append ctitle(Model Estimation using Random Effects) $\frac{\texttt{test.doc}}{\texttt{dir} \; : \; \texttt{seeout}}$
- 34 . huasman fixed random, sigmamore unrecognized command: huasman
- 35 . hausman fixed random, sigmamore

r(199);

Note: the rank of the differenced variance matrix (13) does not equal the number of coefficients be sure this is what you expect, or there may be problems computing the test. Examine the estimators for anything unexpected and possibly consider scaling your variables so that the on a similar scale.

	Coeffi				
	(b)	(B)	(b-B)	sqrt(diag(V b-V B))	
	fixed	random	Difference	S.E.	
adult mort~y	038614	0396134	.0009994	.0001549	
infant mort	-42.77758	-57.91783	15.14025	2.530458	
age14mort	-152.8186	-156.8811	4.062509	5.906473	
alcohol	.0137867	.0075592	.0062275	.0045218	
bmi	2467772	.2491593	4959365	.069152	
hepatitis	0014865	0008642	0006223	.0001649	
measles	.0100405	.0102684	0002279	.0003405	
polio	.0011732	001255	.0024281	.0003323	
diphtheria	0048754	0049315	.0000561	.0004112	
basic water	.0041906	.0216604	0174698	.0035535	
gni capita	3.42e-06	.0000324	0000289	8.87e-06	
gghed	0826417	.0705717	1532134	.0136807	
che gdp	045382	0413348	0040471	.0054177	
une pop	-3.73e-06	3.78e-07	-4.11e-06	3.54e-06	
une hiv	0570253	0650407	.0080155	.0203534	
une gni	9.48e-06	.0000248	0000154	5.87e-06	
une edu sp~d	.0430417	.0241497	.018892	.0030986	
2001bn.year	.2582378	.1509906	.1072472	.009811	
2002.year	.3151027	.1255386	.189564	.0180557	
2003.year	.3997189	.1182394	.2814794	.0274782	
2004.year	.5701967	.1872846	.3829121	.0367985	
2005.year	.736396	.2454835	.4909124	.0468808	
2006.year	.9053688	.2974137	.6079551	.0570327	
2007.year	1.046454	.3460705	.7003833	.0656621	
2008.year	1.169585	.3635465	.8060389	.0749585	
2009.year	1.32254	.4079732	.9145671	.0842869	
2010.year	1.448559	.445606	1.002953	.0917528	
2011.year	1.623439	.5232636	1.100176	.1010235	
2012.year	1.74626	.5683583	1.177902	.1077641	
2013.year	1.920876	. 646044	1.274832	.1159058	

b = consistent under Ho and Ha; obtained from xtreg B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

 $chi2(13) = (b-B)'[(V_b-V_B)^(-1)](b-B)$

= 238.87

Prob>chi2 = **0.0000**

- 36 . outreg2 using hausman.doc, replace ctitle(Results of Wu-Hausman Test) $\frac{\text{hausman.doc}}{\text{dir} \; : \; \underline{\text{seeout}}}$
- 37 . drop une_gni
- 38 . pwcorr adult_mortality infant_mort age14mort alcohol bmi hepatitis measles polio diphtheria basi
 > gghed che_gdp une_pop une_hiv une_edu_spend, star(0.05) sig

	adult_~y :	infant~t a	age14m~t	alcohol	bmi 1	hepati~s	measles
adult_mort~y	1.0000						
infant_mort	0.8132* 0.0000	1.0000					
age14mort	0.7562* 0.0000	0.9090* 0.0000	1.0000				
alcohol	-0.2465* 0.0000	-0.4446* 0.0000	-0.3057* 0.0000	1.0000			
bmi	-0.5171* 0.0000	-0.6419* 0.0000	-0.6152* 0.0000	0.2728* 0.0000	1.0000		
hepatitis	-0.2769* 0.0000	-0.4257* 0.0000	-0.3889* 0.0000	0.1190* 0.0000	0.2916* 0.0000	1.0000	
measles	-0.5262* 0.0000	-0.7202* 0.0000	-0.6986* 0.0000	0.2917* 0.0000	0.4688* 0.0000	0.6803* 0.0000	1.0000
polio	-0.5380*	-0.7286*	-0.7008*	0.2898*	0.4413*	0.6932*	0.9242*
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
diphtheria	-0.5300*	-0.7207*	-0.6941*	0.2943*	0.4462*	0.7221*	0.9232*
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
basic_water	-0.7327*	-0.8515*	-0.8023*	0.4077*	0.6733*	0.3656*	0.6599*
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
gni_capita	-0.5277*	-0.5395*	-0.4178*	0.3050*	0.4108*	0.1860*	0.3436*
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
gghed	-0.4858*	-0.5768*	-0.4474*	0.5296*	0.4617*	0.1646*	0.3970*
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
che_gdp	-0.1986*	-0.2384*	-0.1623*	0.3722*	0.2480*	0.0692*	0.2038*
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0006	0.0000
une_pop	-0.0615*	-0.0040	-0.0330	-0.0378*	-0.1662*	-0.1205*	-0.0158
	0.0006	0.8260	0.0677	0.0376	0.0000	0.0000	0.3812
une_hiv	0.6806*	0.3416*	0.2920*	-0.0383	-0.1547*	-0.0476*	-0.1108*
	0.0000	0.0000	0.0000	0.0645	0.0000	0.0388	0.0000
une_edu_sp~d	-0.1471*	-0.3187*	-0.2830*	0.2160*	0.3124*	0.1498*	0.2701*
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	polio	diphth~a l	basic_~r	gni_ca~a	gghed	che_gdp	une_pop
polio	1.0000						
diphtheria	0.9645* 0.0000	1.0000					
basic_water	0.6621* 0.0000	0.6517* 0.0000	1.0000				
gni_capita	0.3569* 0.0000	0.3557* 0.0000	0.5210* 0.0000	1.0000			
gghed	0.4127* 0.0000	0.4096* 0.0000	0.5100* 0.0000	0.4248* 0.0000	1.0000		
che_gdp	0.2239* 0.0000	0.2242* 0.0000	0.2054* 0.0000	0.1274* 0.0000	0.6899* 0.0000	1.0000	
une_pop	-0.0297 0.1008	-0.0282 0.1197	0.0289 0.1108	-0.0389 0.0566	-0.0812* 0.0000	-0.0710* 0.0001	1.0000
une_hiv	-0.1078* 0.0000	-0.0935* 0.0000	-0.2871* 0.0000	-0.1907* 0.0000	-0.0866* 0.0000	0.0249 0.2338	-0.1023* 0.0000
une_edu_sp~d	0.3143* 0.0000	0.2980* 0.0000	0.2711* 0.0000	0.2257* 0.0000	0.5216* 0.0000	0.3415* 0.0000	-0.1008* 0.0000
	une_hiv	une_ed~d					
une_hiv	1.0000						
une_edu_sp~d	0.1888* 0.0000	1.0000					

- 40 . graph matrix adult_mortality infant_mort agel4mort alcohol bmi hepatitis measles polio diphtheri > capita gghed che_gdp une_pop une_hiv une_edu_spend, half maxis(ylabel(none) xlabel(none))
- 41 . graph export "C:\Users\pddes\Desktop\ae project 2\Graph.eps", as(eps) preview(off) replace (note: file C:\Users\pddes\Desktop\ae project 2\Graph.eps not found) (file C:\Users\pddes\Desktop\ae project 2\Graph.eps written in EPS format)
- 42 . xtreg life_expect adult_mortality infant_mort age14mort alcohol bmi hepatitis measles polio diph
 > gni_capita gghed che_gdp une_pop une_hiv une_gni une_edu_spend i.year, fe
 variable une_gni not found
 r(111);

43 . xtreg life expect adult mortality infant mort age14mort alcohol bmi hepatitis measles polio diph > gni_capita gghed che_gdp une_pop une_hiv une_edu_spend i.year, fe

Number of obs = 901 Number of groups = 112 Fixed-effects (within) regression Group variable: country num R-sq: within = 0.9792between = **0.9314** overall = 0.9269F(29,760) = 1233.06 Prob > F = 0.0000 $corr(u_i, Xb) = 0.7242$

life_expect	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
adult mortality	0386272	.0005557	-69.51	0.000	0397181	0375363
infant mort	-43.36339	4.510012	-9.61	0.000	-52.21695	-34.50983
age14mort	-150.7627	16.20815	-9.30	0.000	-182.5807	-118.9446
alcohol	.0132166	.0110294	1.20	0.231	0084351	.0348682
bmi	2390598	.0779326	-3.07	0.002	3920486	0860711
hepatitis	0014477	.0009061	-1.60	0.111	0032264	.000331
measles	.009859	.0024384	4.04	0.000	.0050722	.0146459
polio	.0006673	.0029584	0.23	0.822	0051402	.0064748
diphtheria	0041831	.0031206	-1.34	0.180	0103092	.0019429
basic water	.0037547	.0058546	0.64	0.522	0077384	.0152478
gni capita	.0000126	6.08e-06	2.08	0.038	7.02e-07	.0000246
gghed	0888739	.0273184	-3.25	0.001	1425025	0352454
che gdp	0431496	.0156852	-2.75	0.006	0739412	0123581
une pop	-3.90e-06	3.54e-06	-1.10	0.271	0000108	3.05e-06
une hiv	0538518	.0246159	-2.19	0.029	102175	0055286
une_edu_spend	.0391444	.0129992	3.01	0.003	.0136257	.064663
year						
2001	.2473638	.0535998	4.62	0.000	.1421425	.3525851
2002	.320939	.0543663	5.90	0.000	.214213	.4276651
2003	.3930155	.0580798	6.77	0.000	. 2789997	.5070313
2004	.5580058	.0615377	9.07	0.000	.4372018	. 6788098
2005	.7210019	.0690539	10.44	0.000	.5854429	.8565608
2006	.8958805	.0757431	11.83	0.000	.7471899	1.044571
2007	1.04031	.0817513	12.73	0.000	.8798246	1.200795
2008	1.157641	.0887162	13.05	0.000	. 9834833	1.331799
2009	1.313367	.0963851	13.63	0.000	1.124154	1.502579
2010	1.431212	.1024769	13.97	0.000	1.230041	1.632384
2011	1.612189	.1104762	14.59	0.000	1.395314	1.829063
2012	1.735708	.1165626	14.89	0.000	1.506885	1.964531
2013	1.911012	.124195	15.39	0.000	1.667206	2.154818
_cons	82.82516	1.914145	43.27	0.000	79.06752	86.5828
sigma u	3.4885178					
sigma_e	.22756711					
rho	.99576266	(fraction	of waria	nce due t	o 11 i)	

F test that all $u_i=0$: F(111, 760) = 168.59 Prob > F = 0.0000

```
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```

44 . predict LE_predict
 (option xb assumed; fitted values)
 (2210 missing values generated)

45 . estat hettest
 invalid subcommand hettest
 r(321);

46 . hettest
 last estimates not found
r(301);

47 . predict LE_predict
 LE_predict already defined
 r(110);

48 . hettest estat
 last estimates not found
r(301);

49 . gen u_hat= life_expect-LE_predict
 (2210 missing values generated)

50 . twoway (scatter LE_predict u_hat)

51 . ssc xttest3
 ssc: xttest3: invalid subcommand
 r(198);

52 . ssc install xtest3
 ssc install: "xtest3" not found at SSC, type -findit xtest3 (To find all packages at SSC that start with x, type -ssc describe x-)
 r(601);

53 . ssc install xttest3
 checking xttest3 consistency and verifying not already installed...
 installing into c:\ado\plus\...
 installation complete.

54 . xttest3

Modified Wald test for groupwise heteroskedasticity in fixed effect regression model

H0: sigma(i)^2 = sigma^2 for all i

chi2 (112) = 7.8e+24 Prob>chi2 = 0.0000

55 . xtreg life_expect adult_mortality infant_mort age14mort alcohol bmi hepatitis measles polio diph
> gni capita gghed che gdp une pop une hiv une edu spend i.year, robust fe

= 901 Fixed-effects (within) regression Number of obs Group variable: country_num Number of groups = R-sq: within = 0.9792Obs per group: min = between = **0.9314** avg = 8.0 overall = **0.9269** max = 14 582.24 F(29,111) = $corr(u_i, Xb) = 0.7242$ 0.0000 Prob > F

(Std. Err. adjusted for 112 clusters in country_num)

lifo ovpost	Coef.	Robust Std. Err.	t	P> t	[95% Conf.	Intorvali
life_expect	coer.	Stu. EII.		F/ L	[93% COIII.	
adult_mortality	0386272	.0009241	-41.80	0.000	0404583	036796
infant_mort	-43.36339	10.78051	-4.02	0.000	-64.72569	-22.0010
age14mort	-150.7627	28.04331	-5.38	0.000	-206.3324	-95.1929
alcohol	.0132166	.0259382	0.51	0.611	0381818	.064614
bmi	2390598	.1794094	-1.33	0.185	5945715	.116451
hepatitis	0014477	.0015189	-0.95	0.343	0044576	.001562
measles	.009859	.0051821	1.90	0.060	0004097	.020127
polio	.0006673	.0037599	0.18	0.859	0067831	.008117
diphtheria	0041831	.0044243	-0.95	0.346	0129502	.00458
basic water	.0037547	.0130426	0.29	0.774	0220901	.029599
gni capita	.0000126	.0000177	0.71	0.478	0000225	.000047
gghed	0888739	.0408411	-2.18	0.032	1698033	007944
che gdp	0431496	.0273531	-1.58	0.118	0973516	.011052
une_pop	-3.90e-06	7.70e-06	-0.51	0.614	0000191	.000011
une hiv	0538518	.0503927	-1.07	0.288	1537083	.046004
une edu spend	.0391444	.0252535	1.55	0.124	0108972	.089185
year						
2001	.2473638	.0589211	4.20	0.000	.1306078	.364119
2002	.320939	.0721042	4.45	0.000	.1780598	.463818
2003	.3930155	.0878222	4.48	0.000	.21899	.567041
2004	.5580058	.1130039	4.94	0.000	.3340809	.781930
2005	.7210019	.1340596	5.38	0.000	. 4553538	. 9866
2006	.8958805	.1592313	5.63	0.000	.5803531	1.21140
2007	1.04031	.1869214	5.57	0.000	.6699126	1.41070
2008	1.157641	.2124529	5.45	0.000	.7366516	1.57863
2009	1.313367	.2330327	5.64	0.000	.851597	1.77513
2010	1.431212	.253498	5.65	0.000	.9288891	1.93353
2011	1.612189	.2762113	5.84	0.000	1.064858	2.1595
2012	1.735708	.2893191	6.00	0.000	1.162403	2.30901
2013	1.911012	.311707	6.13	0.000	1.293344	2.5286
_cons	82.82516	4.360157	19.00	0.000	74.18522	91.465
sigma u	3.4885178					
sigma_u sigma e	.22756711					
sigma_e rho	.99576266	(fraction	of maria	ngo due +	0 11 11	
rno	.995/6266	(IIaction	Or varla:	nce due t	.o u_1)	