



Statistics and Data Science

17.0
SE-Standard Edition

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Notes:

1. Unicode is supported; see [help unicode advice](#).
2. Maximum number of variables is set to 5,000; see [help set maxvar](#).

```
1 . use "B:\LAP_inst_reg_data.dta"

2 . destring user, g(user_)
   user: all characters numeric; user_ generated as long

3 . destring period, g(period_)
   period: all characters numeric; period_ generated as byte

4 . gen cluster1 = (cluster==0)

5 . gen cluster2 = (cluster==1)

6 . gen cluster3 = (cluster==2)

7 . gen cluster3 = (cluster==3)
   variable cluster3 already defined
   r(110);

8 . gen cluster4 = (cluster==3)

9 . gen cluster5 = (cluster==4)

10 . save "B:\LAP_inst_reg_data_04.dta"
    file B:\LAP_inst_reg_data_04.dta saved

11 . xtreg P_ave FC blockdiff1 blockdiff2 DOS DOS_t pppdays gt90 pmax tave tmin totalpp cdd rhave pp ET, fe vce(robust)
    must specify panelvar; use xtset
    r(459);

12 . xtset user_

    Panel variable: user_ (unbalanced)

13 . xtreg P_ave FC blockdiff1 blockdiff2 DOS DOS_t pppdays gt90 pmax tave tmin totalpp cdd rhave pp ET, fe vce(robust)
    note: blockdiff1 omitted because of collinearity.
    note: blockdiff2 omitted because of collinearity.
    note: rhave omitted because of collinearity.
    note: pp omitted because of collinearity.
    note: ET omitted because of collinearity.

Fixed-effects (within) regression                Number of obs   =   202,507
Group variable: user_                          Number of groups =   18,444
```

P_ave	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
FC	.1146393	.0058556	19.58	0.000	.1031619	.1261168
DOS	.0309626	.0041518	7.46	0.000	.0228248	.0391005
DOS_t	.0863199	.0031821	27.13	0.000	.0800827	.092557
ppdays	.008164	.000783	10.43	0.000	.0066293	.0096987
gt90	-.0256472	.0009232	-27.78	0.000	-.0274568	-.0238376
pmax	.0622514	.0072018	8.64	0.000	.0481352	.0763676
tave	.0573018	.0016696	34.32	0.000	.0540291	.0605744
tmin	-.0704156	.0017975	-39.17	0.000	-.0739389	-.0668923
totalpp	.0012168	.0008474	1.44	0.151	-.0004441	.0028778
cdd	.001076	.0000494	21.79	0.000	.0009792	.0011728
_cons	-12.51567	.3840684	-32.59	0.000	-13.26848	-11.76286
sigma_u	.26018024					
sigma_e	.38461141					

rho	.31394979 (fraction of variance due to u_i)
-----	---

```
15 . predict Phat
    (option xb assumed; fitted values)
```

```
16 . gen Phat1 = Phat * cluster1
```

```
17 . gen Phat2 = Phat * cluster2
```

```
18 . gen Phat3 = Phat * cluster3
```

```
19 . gen Phat4 = Phat * cluster4
```

```
20 . gen Phat5 = Phat * cluster5
```

```
21 . xtreg Q Phat DOS_t ppdays gt90 pmax tave tmin totalpp cdd, fe vce(robust)
```

Fixed-effects (within) regression	Number of obs	=	202,507
Group variable: user_	Number of groups	=	18,444

R-squared:	Obs per group:
Within = 0.1735	min = 1
Between = 0.0013	avg = 11.0
Overall = 0.0518	max = 11

	F(9,18443)	=	2250.57
corr(u_i, Xb) = 0.0001	Prob > F	=	0.0000

(Std. err. adjusted for 18,444 clusters in user_)

Q	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
Phat	.1476109	.0334714	4.41	0.000	.0820039	.213218
DOS_t	.0136038	.0030145	4.51	0.000	.0076952	.0195124
ppdays	-.0134126	.0003399	-39.46	0.000	-.0140789	-.0127463
gt90	.0141415	.0008325	16.99	0.000	.0125097	.0157733
pmax	.0444112	.00419	10.60	0.000	.0361984	.052624
tave	-.0253609	.0021683	-11.70	0.000	-.0296111	-.0211108
tmin	.0500788	.0026194	19.12	0.000	.0449446	.055213
totalpp	-.0055823	.0006548	-8.53	0.000	-.0068658	-.0042988
cdd	-.0006707	.0000387	-17.35	0.000	-.0007465	-.000595
_cons	6.050036	.2764967	21.88	0.000	5.508077	6.591995
sigma_u	.62900035					
sigma_e	.38200192					
rho	.73054952	(fraction of variance due to u_i)				

```
22 . xtivreg Q DOS_t ppdays gt90 pmax tave tmin totalpp cdd (P_ave = FC DOS), fe vce(robust)
```

Fixed-effects (within) IV regression	Number of obs	=	202,507
Group variable: user_	Number of groups	=	18,444

R-squared:	Obs per group:
Within = .	min = 1
Between = 0.5567	avg = 11.0
Overall = 0.0005	max = 11

	Wald chi2(9)	=	5.43e+07
corr(u_i, Xb) = -0.1493	Prob > chi2	=	0.0000

(Std. err. adjusted for 18,444 clusters in user_)

Q	Coefficient	Robust std. err.	z	P> z	[95% conf. interval]	
P_ave	.1476111	.037085	3.98	0.000	.0749258	.2202964
DOS_t	.0136038	.0034585	3.93	0.000	.0068252	.0203823
ppdays	-.0134126	.0003954	-33.92	0.000	-.0141876	-.0126377
gt90	.0141415	.0008941	15.82	0.000	.0123891	.0158939
pmax	.0444112	.0048057	9.24	0.000	.0349922	.0538301
tave	-.0253609	.0023438	-10.82	0.000	-.0299548	-.0207671
tmin	.0500788	.0028447	17.60	0.000	.0445034	.0556542
totalpp	-.0055823	.0007585	-7.36	0.000	-.007069	-.0040956
cdd	-.0006707	.0000422	-15.91	0.000	-.0007534	-.0005881
_cons	6.050038	.3112914	19.44	0.000	5.439918	6.660158
sigma_u	.6581392					
sigma_e	.42625591					
rho	.70448618	(fraction of variance due to u_i)				

Instrumented: P_ave

Instruments: DOS_t ppdays gt90 pmax tave tmin totalpp cdd FC DOS

23 . xtivreg Q DOS_t ppdays gt90 rmax tave tmin totalpp cdd rhave pp ET (P_ave = FC DOS blockdiff1 blockdiff2), fe vce(robust) variable rmax not found
r(111);

24 . xtivreg Q DOS_t ppdays gt90 pmax tave tmin totalpp cdd rhave pp ET (P_ave = FC DOS blockdiff1 blockdiff2), fe vce(robust) note: ET omitted because of collinearity.
note: blockdiff2 omitted because of collinearity.

Fixed-effects (within) IV regression Number of obs = 202,507
Group variable: user_ Number of groups = 18,444

R-squared: Obs per group: min = 1
Within = 0.5278 avg = 11.0
Between = 0.5551 max = 11
Overall = 0.3833

corr(u_i, Xb) = 0.2527 Wald chi2(10) = 1.81e+08
Prob > chi2 = 0.0000

(Std. err. adjusted for 18,444 clusters in user_)

Q	Coefficient	Robust std. err.	z	P> z	[95% conf. interval]	
P_ave	-.3798938	.0376	-10.10	0.000	-.4535884	-.3061992
DOS_t	.0257314	.0021121	12.18	0.000	.0215918	.029871
ppdays	-.0206194	.0004582	-45.00	0.000	-.0215174	-.0197214
gt90	.0257972	.0010338	24.95	0.000	.0237711	.0278233
pmax	.0770543	.0032122	23.99	0.000	.0707585	.0833501
tave	.0151777	.0026228	5.79	0.000	.0100372	.0203182
tmin	-.0016152	.0033984	-0.48	0.635	-.0082759	.0050455
totalpp	.0037699	.0006277	6.01	0.000	.0025396	.0050003
cdd	-.0006718	.0000312	-21.55	0.000	-.000733	-.0006107
rhav	.027896	.0014806	18.84	0.000	.0249941	.0307979
pp	0	(omitted)				
ET	0	(omitted)				
_cons	1.926281	.2798986	6.88	0.000	1.37769	2.474872
sigma_u	.55917503					
sigma_e	.28873291					
rho	.78950113	(fraction of variance due to u_i)				

Instrumented: P_ave

(Std. err. adjusted for 18,444 clusters in user_)

Q	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
Phat_0	-.3798935	.0488621	-7.77	0.000	-.4756677	-.2841194
DOS_t	.0257314	.0030549	8.42	0.000	.0197436	.0317192
ppdays	-.0206194	.0006278	-32.85	0.000	-.0218499	-.0193889
gt90	.0257972	.0012672	20.36	0.000	.0233134	.028281
pmax	.0770542	.0045926	16.78	0.000	.0680522	.0860562
tave	.0151777	.0033778	4.49	0.000	.0085569	.0217985
tmin	-.0016152	.0043529	-0.37	0.711	-.0101472	.0069168
totalpp	.0037699	.0008896	4.24	0.000	.0020262	.0055136
cdd	-.0006718	.0000387	-17.38	0.000	-.0007476	-.0005961
rhav	.027896	.0019411	14.37	0.000	.0240912	.0317008
pp	0	(omitted)				
_cons	1.926284	.3775337	5.10	0.000	1.186283	2.666285
sigma_u	.62899585					
sigma_e	.38180835					
rho	.7307462	(fraction of variance due to u_i)				

```
28 . gen Phat_01 = Phat_0 * cluster1
```

```
29 . xtivreg Q DOS_t ppdays gt90 rmax tave tmin totalpp cdd rhav pp ET (P_ave = FC DOS blockdiff1 blockdiff2), fe vce(robust)
variable rmax not found
r(111);
```

```
30 . xtivreg Q DOS_t ppdays gt90 pmax tave tmin totalpp cdd rhav pp ET (P_ave = FC DOS blockdiff1 blockdiff2), fe vce(robust)
note: ET omitted because of collinearity.
note: blockdiff2 omitted because of collinearity.
```

First-stage within regression

```
Fixed-effects (within) regression      Number of obs   =   202,507
Group variable: user_                 Number of groups =    18,444
```

```
R-squared:                               Obs per group:
  Within = 0.1932                        min =          1
  Between = 0.0032                       avg =         11.0
  Overall = 0.1446                       max =          11
```

```
corr(u_i, Xb) = 0.0003                   F(10,18443)      =   2553.33
                                           Prob > F         =    0.0000
```

(Std. err. adjusted for 18,444 clusters in user_)

P_ave	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
DOS_t	.004313	.0035803	1.20	0.228	-.0027047	.0113307
ppdays	-.0364181	.0015488	-23.51	0.000	-.0394539	-.0333823
gt90	-.0104063	.001265	-8.23	0.000	-.0128857	-.0079268
pmax	-.0328426	.006925	-4.74	0.000	-.0464162	-.0192689
tave	.0804848	.0019955	40.33	0.000	.0765734	.0843961
tmin	-.1075526	.001968	-54.65	0.000	-.11141	-.1036951
totalpp	-.0584121	.0031211	-18.71	0.000	-.0645298	-.0522943
cdd	.0007931	.0000348	22.78	0.000	.0007248	.0008613
rhav	.029029	.001262	23.00	0.000	.0265554	.0315026
pp	6.891246	.3298136	20.89	0.000	6.244781	7.537711
ET	0	(omitted)				
FC	0	(omitted)				
DOS	0	(omitted)				
blockdiff1	0	(omitted)				
blockdiff2	0	(omitted)				
_cons	-4.756832	.1965932	-24.20	0.000	-5.142173	-4.371491

sigma_u	.26018024	
sigma_e	.38461141	
rho	.31394979	(fraction of variance due to u_i)

```
Fixed-effects (within) IV regression      Number of obs   =   202,507
Group variable: user_                    Number of groups =    18,444
```

R-squared:	Obs per group:
Within = 0.5278	min = 1
Between = 0.5551	avg = 11.0
Overall = 0.3833	max = 11

```
corr(u_i, Xb) = 0.2527
```

Wald chi2(10)	=	1.90e+15
Prob > chi2	=	0.0000

(Std. err. adjusted for 18,444 clusters in user_)

Q	Coefficient	Robust std. err.	z	P> z	[95% conf. interval]	
P_ave	-.3798938	.0376	-10.10	0.000	-.4535884	-.3061992
DOS_t	.0257314	.0021121	12.18	0.000	.0215918	.029871
ppdays	-.0206194	.0004582	-45.00	0.000	-.0215174	-.0197214
gt90	.0257972	.0010338	24.95	0.000	.0237711	.0278233
pmax	.0770543	.0032122	23.99	0.000	.0707585	.0833501
tave	.0151777	.0026228	5.79	0.000	.0100372	.0203182
tmin	-.0016152	.0033984	-0.48	0.635	-.0082759	.0050455
totalpp	.0037699	.0006277	6.01	0.000	.0025396	.0050003
cdd	-.0006718	.0000312	-21.55	0.000	-.000733	-.0006107
rhave	.027896	.0014806	18.84	0.000	.0249941	.0307979
pp	0	(omitted)				
ET	0	(omitted)				
_cons	1.926281	.2798986	6.88	0.000	1.37769	2.474872
sigma_u	.55917503					
sigma_e	.28873291					
rho	.78950113	(fraction of variance due to u_i)				

```
Instrumented: P_ave
Instruments: DOS_t pppdays gt90 pmax tave tmin totalpp cdd rhave pp FC DOS
             blockdiff1
```

```
31 . xtivreg Q DOS_t pppdays gt90 pmax tave tmin totalpp cdd rhave pp ET (P_ave = FC DOS), fe vce(robust) first
note: ET omitted because of collinearity.
```

First-stage within regression

```
Fixed-effects (within) regression      Number of obs   =   202,507
Group variable: user_                 Number of groups =    18,444
```

R-squared:	Obs per group:
Within = 0.1932	min = 1
Between = 0.0032	avg = 11.0
Overall = 0.1446	max = 11

corr(u_i, Xb) = 0.0003	F(10,18443)	=	2553.33
	Prob > F	=	0.0000

(Std. err. adjusted for 18,444 clusters in user_)

P_ave	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
DOS_t	.004313	.0035803	1.20	0.228	-.0027047	.0113307
ppdays	-.0364181	.0015488	-23.51	0.000	-.0394539	-.0333823
gt90	-.0104063	.001265	-8.23	0.000	-.0128857	-.0079268
pmax	-.0328426	.006925	-4.74	0.000	-.0464162	-.0192689
tave	.0804848	.0019955	40.33	0.000	.0765734	.0843961
tmin	-.1075526	.001968	-54.65	0.000	-.11141	-.1036951
totalpp	-.0584121	.0031211	-18.71	0.000	-.0645298	-.0522943
cdd	.0007931	.0000348	22.78	0.000	.0007248	.0008613
rhav	.029029	.001262	23.00	0.000	.0265554	.0315026
pp	6.891246	.3298136	20.89	0.000	6.244781	7.537711
ET	0	(omitted)				
FC	0	(omitted)				
DOS	0	(omitted)				
_cons	-4.756832	.1965932	-24.20	0.000	-5.142173	-4.371491
sigma_u	.26018024					
sigma_e	.38461141					
rho	.31394979	(fraction of variance due to u_i)				

Fixed-effects (within) IV regression Number of obs = 202,507
Group variable: user_ Number of groups = 18,444

R-squared: Obs per group:

Within = 0.5278	min =	1
Between = 0.5551	avg =	11.0
Overall = 0.3833	max =	11

corr(u_i, Xb) = 0.2527 Wald chi2(10) = 1.81e+08
Prob > chi2 = 0.0000

(Std. err. adjusted for 18,444 clusters in user_)

Q	Coefficient	Robust std. err.	z	P> z	[95% conf. interval]	
P_ave	-.3798938	.0376	-10.10	0.000	-.4535884	-.3061992
DOS_t	.0257314	.0021121	12.18	0.000	.0215918	.029871
ppdays	-.0206194	.0004582	-45.00	0.000	-.0215174	-.0197214
gt90	.0257972	.0010338	24.95	0.000	.0237711	.0278233
pmax	.0770543	.0032122	23.99	0.000	.0707585	.0833501
tave	.0151777	.0026228	5.79	0.000	.0100372	.0203182
tmin	-.0016152	.0033984	-0.48	0.635	-.0082759	.0050455
totalpp	.0037699	.0006277	6.01	0.000	.0025396	.0050003
cdd	-.0006718	.0000312	-21.55	0.000	-.000733	-.0006107
rhav	.027896	.0014806	18.84	0.000	.0249941	.0307979
pp	0	(omitted)				
ET	0	(omitted)				
_cons	1.926281	.2798986	6.88	0.000	1.37769	2.474872
sigma_u	.55917503					
sigma_e	.28873291					
rho	.78950113	(fraction of variance due to u_i)				

Instrumented: P_ave
Instruments: DOS_t ppdays gt90 pmax tave tmin totalpp cdd rhav pp FC DOS

32 . xtivreg Q DOS_t ppdays gt90 pmax tave tmin totalpp cdd rhave (P_ave = FC DOS), fe vce(robust) first

First-stage within regression

Fixed-effects (within) regression	Number of obs	=	202,507
Group variable: user_	Number of groups	=	18,444
R-squared:	Obs per group:		
Within = 0.1932	min =		1
Between = 0.0032	avg =		11.0
Overall = 0.1446	max =		11
	F(10,18443)	=	2553.33
corr(u_i, Xb) = 0.0003	Prob > F	=	0.0000

(Std. err. adjusted for 18,444 clusters in user_)

P_ave	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
DOS_t	.0814415	.0026972	30.20	0.000	.0761548	.0867281
ppdays	.009736	.0009666	10.07	0.000	.0078414	.0116307
gt90	-.048661	.0028916	-16.83	0.000	-.0543288	-.0429933
pmax	.1272134	.0036741	34.62	0.000	.1200118	.134415
tave	.0579365	.0016434	35.25	0.000	.0547154	.0611577
tmin	-.0749527	.0014369	-52.16	0.000	-.0777692	-.0721361
totalpp	-.0059023	.0010988	-5.37	0.000	-.008056	-.0037485
cdd	.0019519	.0000816	23.91	0.000	.0017919	.0021119
rhav	-.0199621	.0026767	-7.46	0.000	-.0252087	-.0147155
FC	.2060491	.0098615	20.89	0.000	.1867197	.2253785
DOS	0	(omitted)				
_cons	-10.57841	.1541481	-68.62	0.000	-10.88056	-10.27627
sigma_u	.26018024					
sigma_e	.38461141					
rho	.31394979	(fraction of variance due to u_i)				

Fixed-effects (within) IV regression	Number of obs	=	202,507
Group variable: user_	Number of groups	=	18,444
R-squared:	Obs per group:		
Within = 0.5278	min =		1
Between = 0.5551	avg =		11.0
Overall = 0.3833	max =		11

	Wald chi2(10)	=	1.81e+08
corr(u_i, Xb) = 0.2527	Prob > chi2	=	0.0000

(Std. err. adjusted for 18,444 clusters in user_)

Q	Coefficient	Robust std. err.	z	P> z	[95% conf. interval]	
P_ave	-.3798938	.0376	-10.10	0.000	-.4535884	-.3061992
DOS_t	.0257314	.0021121	12.18	0.000	.0215918	.029871
ppdays	-.0206194	.0004582	-45.00	0.000	-.0215174	-.0197214
gt90	.0257972	.0010338	24.95	0.000	.0237711	.0278233
pmax	.0770543	.0032122	23.99	0.000	.0707585	.0833501
tave	.0151777	.0026228	5.79	0.000	.0100372	.0203182
tmin	-.0016152	.0033984	-0.48	0.635	-.0082759	.0050455
totalpp	.0037699	.0006277	6.01	0.000	.0025396	.0050003
cdd	-.0006718	.0000312	-21.55	0.000	-.000733	-.0006107
rhav	.027896	.0014806	18.84	0.000	.0249941	.0307979
_cons	1.926281	.2798986	6.88	0.000	1.37769	2.474872

sigma_u	.55917503	
sigma_e	.28873212	
rho	.78950203	(fraction of variance due to u_i)

Instrumented: P_ave

Instruments: DOS_t pppdays gt90 pmax tave tmin totalpp cdd rhave FC DOS

33 . xtivreg Q DOS_t pppdays gt90 pmax tave tmin totalpp cdd rhave pp ET (P_ave = FC blockdiff2), fe vce(robust) first
note: ET omitted because of collinearity.

First-stage within regression

Fixed-effects (within) regression	Number of obs	=	202,507
Group variable: user_	Number of groups	=	18,444

R-squared:	Obs per group:	
Within = 0.1932	min =	1
Between = 0.0032	avg =	11.0
Overall = 0.1446	max =	11

	F(10,18443)	=	2553.33
corr(u_i, Xb) = 0.0003	Prob > F	=	0.0000

(Std. err. adjusted for 18,444 clusters in user_)

P_ave	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
DOS_t	.004313	.0035803	1.20	0.228	-.0027047	.0113307
ppdays	-.0364181	.0015488	-23.51	0.000	-.0394539	-.0333823
gt90	-.0104063	.001265	-8.23	0.000	-.0128857	-.0079268
pmax	-.0328426	.006925	-4.74	0.000	-.0464162	-.0192689
tave	.0804848	.0019955	40.33	0.000	.0765734	.0843961
tmin	-.1075526	.001968	-54.65	0.000	-.11141	-.1036951
totalpp	-.0584121	.0031211	-18.71	0.000	-.0645298	-.0522943
cdd	.0007931	.0000348	22.78	0.000	.0007248	.0008613
rhav	.029029	.001262	23.00	0.000	.0265554	.0315026
pp	6.891246	.3298136	20.89	0.000	6.244781	7.537711
ET	0 (omitted)					
FC	0 (omitted)					
blockdiff2	0 (omitted)					
_cons	-4.756832	.1965932	-24.20	0.000	-5.142173	-4.371491
sigma_u	.26018024					
sigma_e	.38461141					
rho	.31394979	(fraction of variance due to u_i)				

Fixed-effects (within) IV regression	Number of obs	=	202,507
Group variable: user_	Number of groups	=	18,444

R-squared:	Obs per group:	
Within = 0.5278	min =	1
Between = 0.5551	avg =	11.0
Overall = 0.3833	max =	11

	Wald chi2(10)	=	1.81e+08
corr(u_i, Xb) = 0.2527	Prob > chi2	=	0.0000

(Std. err. adjusted for 18,444 clusters in user_)

Q	Coefficient	Robust std. err.	z	P> z	[95% conf. interval]	
P_ave	-.3798938	.0376	-10.10	0.000	-.4535884	-.3061992
DOS_t	.0257314	.0021121	12.18	0.000	.0215918	.029871
ppdays	-.0206194	.0004582	-45.00	0.000	-.0215174	-.0197214
gt90	.0257972	.0010338	24.95	0.000	.0237711	.0278233
pmax	.0770543	.0032122	23.99	0.000	.0707585	.0833501
tave	.0151777	.0026228	5.79	0.000	.0100372	.0203182
tmin	-.0016152	.0033984	-0.48	0.635	-.0082759	.0050455
totalpp	.0037699	.0006277	6.01	0.000	.0025396	.0050003
cdd	-.0006718	.0000312	-21.55	0.000	-.000733	-.0006107
rhave	.027896	.0014806	18.84	0.000	.0249941	.0307979
pp	0	(omitted)				
ET	0	(omitted)				
_cons	1.926281	.2798986	6.88	0.000	1.37769	2.474872
sigma_u	.55917503					
sigma_e	.28873291					
rho	.78950113	(fraction of variance due to u_i)				

Instrumented: P_ave

Instruments: DOS_t ppdays gt90 pmax tave tmin totalpp cdd rhave pp FC
blockdiff2

34 . xtivreg Q DOS_t ppdays gt90 pmax tave tmin totalpp cdd rhave (P_ave = FC DOS blockdiff2), fe vce(robust) first

First-stage within regression

Fixed-effects (within) regression
Group variable: user_Number of obs = 202,507
Number of groups = 18,444

R-squared:

Within = 0.1932
Between = 0.0032
Overall = 0.1446

Obs per group:

min = 1
avg = 11.0
max = 11corr(u_i, Xb) = 0.0003
F(10,18443) = 2553.33
Prob > F = 0.0000

(Std. err. adjusted for 18,444 clusters in user_)

P_ave	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
DOS_t	.0814415	.0026972	30.20	0.000	.0761548	.0867281
ppdays	.009736	.0009666	10.07	0.000	.0078414	.0116307
gt90	-.048661	.0028916	-16.83	0.000	-.0543288	-.0429933
pmax	.1272134	.0036741	34.62	0.000	.1200118	.134415
tave	.0579365	.0016434	35.25	0.000	.0547154	.0611577
tmin	-.0749527	.0014369	-52.16	0.000	-.0777692	-.0721361
totalpp	-.0059023	.0010988	-5.37	0.000	-.008056	-.0037485
cdd	.0019519	.0000816	23.91	0.000	.0017919	.0021119
rhave	-.0199621	.0026767	-7.46	0.000	-.0252087	-.0147155
FC	.2060491	.0098615	20.89	0.000	.1867197	.2253785
DOS	0	(omitted)				
blockdiff2	0	(omitted)				
_cons	-10.57841	.1541481	-68.62	0.000	-10.88056	-10.27627
sigma_u	.26018024					
sigma_e	.38461141					
rho	.31394979	(fraction of variance due to u_i)				

Fixed-effects (within) IV regression Number of obs = **202,507**
 Group variable: user_ Number of groups = **18,444**

R-squared: Obs per group:
 Within = **0.5278** min = **1**
 Between = **0.5551** avg = **11.0**
 Overall = **0.3833** max = **11**

corr(u_i, Xb) = **0.2527** Wald chi2(10) = **1.81e+08**
 Prob > chi2 = **0.0000**

(Std. err. adjusted for **18,444** clusters in user_)

Q	Coefficient	Robust std. err.	z	P> z	[95% conf. interval]	
P_ave	-.3798938	.0376	-10.10	0.000	-.4535884	-.3061992
DOS_t	.0257314	.0021121	12.18	0.000	.0215918	.029871
ppdays	-.0206194	.0004582	-45.00	0.000	-.0215174	-.0197214
gt90	.0257972	.0010338	24.95	0.000	.0237711	.0278233
pmax	.0770543	.0032122	23.99	0.000	.0707585	.0833501
tave	.0151777	.0026228	5.79	0.000	.0100372	.0203182
tmin	-.0016152	.0033984	-0.48	0.635	-.0082759	.0050455
totalpp	.0037699	.0006277	6.01	0.000	.0025396	.0050003
cdd	-.0006718	.0000312	-21.55	0.000	-.000733	-.0006107
rhav	.027896	.0014806	18.84	0.000	.0249941	.0307979
_cons	1.926281	.2798986	6.88	0.000	1.37769	2.474872
sigma_u	.55917503					
sigma_e	.28873212					
rho	.78950203	(fraction of variance due to u_i)				

Instrumented: P_ave
 Instruments: DOS_t ppdays gt90 pmax tave tmin totalpp cdd rhav FC DOS
blockdiff2

35 . xtreg P_ave DOS_t ppdays gt90 pmax tave tmin totalpp cdd rhav DOS FC, fe vce(robust)
 note: FC omitted because of collinearity.

Fixed-effects (within) regression Number of obs = **202,507**
 Group variable: user_ Number of groups = **18,444**

R-squared: Obs per group:
 Within = **0.1932** min = **1**
 Between = **0.0032** avg = **11.0**
 Overall = **0.1446** max = **11**

corr(u_i, Xb) = **0.0003** F(10,18443) = **2553.33**
 Prob > F = **0.0000**

(Std. err. adjusted for **18,444** clusters in user_)

P_ave	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
DOS_t	.092438	.0029502	31.33	0.000	.0866553	.0982208
ppdays	.0061924	.0008372	7.40	0.000	.0045515	.0078334
gt90	.0032151	.0009007	3.57	0.000	.0014496	.0049806
pmax	-.0192191	.0063603	-3.02	0.003	-.0316859	-.0067523
tave	.0565057	.0016425	34.40	0.000	.0532862	.0597253
tmin	-.0647255	.0015814	-40.93	0.000	-.0678252	-.0616258
totalpp	.0101451	.0010579	9.59	0.000	.0080714	.0122187
cdd	-.0000225	.0000326	-0.69	0.491	-.0000863	.0000414
rhav	.0250349	.0012787	19.58	0.000	.0225285	.0275414
DOS	.0697937	.0033403	20.89	0.000	.0632463	.076341
FC	0	(omitted)				

(Std. err. adjusted for 18,444 clusters in user_)

Q	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
Phat_02	-.3864003	.0493226	-7.83	0.000	-.4830772	-.2897234
Phat1	.0421223	.0203908	2.07	0.039	.0021543	.0820902
Phat2	-.037384	.0159899	-2.34	0.019	-.0687257	-.0060424
Phat3	.0909883	.0177832	5.12	0.000	.0561316	.125845
Phat4	-.0034142	.013525	-0.25	0.801	-.0299244	.0230959
DOS_t	.0257312	.0030549	8.42	0.000	.0197433	.0317192
ppdays	-.0206195	.0006278	-32.84	0.000	-.02185	-.0193889
gt90	.0257976	.0012672	20.36	0.000	.0233137	.0282814
pmax	.0770517	.0045927	16.78	0.000	.0680495	.0860539
tave	.0151811	.0033779	4.49	0.000	.0085602	.0218021
tmin	-.0016192	.004353	-0.37	0.710	-.0101515	.006913
totalpp	.0037708	.0008896	4.24	0.000	.0020272	.0055145
cdd	-.0006718	.0000387	-17.38	0.000	-.0007476	-.0005961
rhave	.0278977	.0019412	14.37	0.000	.0240928	.0317027
_cons	1.926072	.3775914	5.10	0.000	1.185958	2.666186
sigma_u	.66383131					
sigma_e	.38174372					
rho	.7514867	(fraction of variance due to u_i)				

40 . xtset user_ period_

Panel variable: user_ (unbalanced)

Time variable: period_, 2 to 12, but with gaps

Delta: 1 unit

41 . xtreg P_ave FC blockdiff1 blockdiff2 DOS DOS_t ppdays gt90 pmax tave tmin totalpp cdd rhave pp ET, fe vce(robust)

note: **blockdiff1** omitted because of collinearity.note: **blockdiff2** omitted because of collinearity.note: **rhave** omitted because of collinearity.note: **pp** omitted because of collinearity.note: **ET** omitted because of collinearity.

Fixed-effects (within) regression

Number of obs = 202,507

Group variable: user_

Number of groups = 18,444

R-squared:

Obs per group:

Within = 0.1932

min = 1

Between = 0.0032

avg = 11.0

Overall = 0.1446

max = 11

corr(u_i, Xb) = 0.0003

F(10,18443) = 2553.33

Prob > F = 0.0000

(Std. err. adjusted for 18,444 clusters in user_)

P_ave	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
FC	.1146393	.0058556	19.58	0.000	.1031619	.1261168
blockdiff1	0	(omitted)				
blockdiff2	0	(omitted)				
DOS	.0309626	.0041518	7.46	0.000	.0228248	.0391005
DOS_t	.0863199	.0031821	27.13	0.000	.0800827	.092557
ppdays	.008164	.000783	10.43	0.000	.0066293	.0096987
gt90	-.0256472	.0009232	-27.78	0.000	-.0274568	-.0238376
pmax	.0622514	.0072018	8.64	0.000	.0481352	.0763676
tave	.0573018	.0016696	34.32	0.000	.0540291	.0605744
tmin	-.0704156	.0017975	-39.17	0.000	-.0739389	-.0668923
totalpp	.0012168	.0008474	1.44	0.151	-.0004441	.0028778
cdd	.001076	.0000494	21.79	0.000	.0009792	.0011728

corr(u_i, Xb) = 0.2527 Wald chi2(10) = 2.19e+15
 Prob > chi2 = 0.0000

(Std. err. adjusted for 18,444 clusters in user_)

Q	Coefficient	Robust std. err.	z	P> z	[95% conf. interval]	
P_ave	-.3798938	.0376	-10.10	0.000	-.4535884	-.3061992
DOS_t	.0257314	.0021121	12.18	0.000	.0215918	.029871
ppdays	-.0206194	.0004582	-45.00	0.000	-.0215174	-.0197214
gt90	.0257972	.0010338	24.95	0.000	.0237711	.0278233
pmax	.0770543	.0032122	23.99	0.000	.0707585	.0833501
tave	.0151777	.0026228	5.79	0.000	.0100372	.0203182
tmin	-.0016152	.0033984	-0.48	0.635	-.0082759	.0050455
totalpp	.0037699	.0006277	6.01	0.000	.0025396	.0050003
cdd	-.0006718	.0000312	-21.55	0.000	-.000733	-.0006107
rhave	.027896	.0014806	18.84	0.000	.0249941	.0307979
_cons	1.926281	.2798986	6.88	0.000	1.37769	2.474872
sigma_u	.55917503					
sigma_e	.28873212					
rho	.78950203	(fraction of variance due to u_i)				

Instrumented: P_ave

Instruments: DOS_t ppdays gt90 pmax tave tmin totalpp cdd rhave DOS FC

47 . gen P_ave1 = P_ave * cluster1

48 . gen P_ave2 = P_ave * cluster2

49 . gen P_ave3 = P_ave * cluster3

50 . gen P_ave4 = P_ave * cluster4

51 . gen P_ave5 = P_ave * cluster5

52 . xtreg Q P_ave P_ave1 P_ave2 P_ave3 P_ave4 DOS_t ppdays gt90 pmax tave tmin totalpp cdd rhave, fe

Fixed-effects (within) regression Number of obs = 202,507
 Group variable: user_ Number of groups = 18,444

R-squared: Obs per group:
 Within = 0.6422 min = 1
 Between = 0.2235 avg = 11.0
 Overall = 0.3240 max = 11

corr(u_i, Xb) = 0.0392 F(14,184049) = 23592.09
 Prob > F = 0.0000

Q	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
P_ave	-.7015611	.0028199	-248.79	0.000	-.707088	-.6960342
P_ave1	-.021425	.0048578	-4.41	0.000	-.0309461	-.0119038
P_ave2	-.1085579	.0038694	-28.06	0.000	-.1161418	-.1009741
P_ave3	.0376282	.0046683	8.06	0.000	.0284785	.0467779
P_ave4	-.0700705	.0038455	-18.22	0.000	-.0776076	-.0625334
DOS_t	.0463091	.0017125	27.04	0.000	.0429526	.0496657
ppdays	-.0228416	.0004239	-53.88	0.000	-.0236724	-.0220107
gt90	.0291385	.0006039	48.25	0.000	.0279548	.0303221
pmax	.1094397	.0022907	47.78	0.000	.10495	.1139294
tave	.0366809	.0011293	32.48	0.000	.0344676	.0388942
tmin	-.0309797	.0009709	-31.91	0.000	-.0328827	-.0290767
totalpp	.0051564	.0007192	7.17	0.000	.0037468	.0065661
cdd	-.000554	.0000191	-29.06	0.000	-.0005914	-.0005166
rhave	.0388573	.0009072	42.83	0.000	.0370792	.0406354

