

```

1 . * The GMM estimation is mainly processed in Stata, where there are two advan
  > tages:
2 .
3 . * 1). Stata has far better support for estimation for various models than Py
  > thon.
4 . * 2). Some statistics and tests are automatically done by Stata than in Pyth
  > on.
5 .
6 . * reconfirm the setting of variables, double term, and interactions
7 .
8 . replace svmci_sqr=svmci^2
  (0 real changes made)

9 . replace ci_rq=svmci*reg_qual
  (0 real changes made)

10 .
11 . * get the raw gdp-pcap
12 .
13 . gen gdp_pcap=exp(lgdp_pcap)
  (58 missing values generated)

14 .
15 . * export the sum stats
16 .
17 . asdoc sum, replace

```

Variable	Obs	Mean	Std. Dev.	Min	Max
v1	2,688	1343.5	776.1031	0	2687
country_id	2,688	63.5	36.95616	0	127
svmci	1,974	.2302106	.1695904	0	1
ci_rq	1,974	.0141611	.3203259	-1.159255	1.915164
svmci_sqr	1,974	.0817433	.1542338	0	1
lag_lgdp_p~p	2,627	7.802162	1.242143	5.212476	11.08006
pl_mar	2,688	.0078125	.0880588	0	1
pl_mex	2,688	.0078125	.0880588	0	1
pl_slb	2,688	.0078125	.0880588	0	1
pl_ven	2,688	.0078125	.0880588	0	1
pl_kgz	2,688	.0078125	.0880588	0	1
pl_sur	2,688	.0078125	.0880588	0	1
pl_mys	2,688	.0078125	.0880588	0	1
pl_geo	2,688	.0078125	.0880588	0	1
pl_pak	2,688	.0078125	.0880588	0	1
pl_lbn	2,688	.0078125	.0880588	0	1
pl_bwa	2,688	.0078125	.0880588	0	1

pl_bih	2,688	.0078125	.0880588	0	1
pl_ner	2,688	.0078125	.0880588	0	1
pl_bra	2,688	.0078125	.0880588	0	1
-----+					
pl_alb	2,688	.0078125	.0880588	0	1
pl_tgo	2,688	.0078125	.0880588	0	1
pl_lby	2,688	.0078125	.0880588	0	1
pl_kaz	2,688	.0078125	.0880588	0	1
pl_sle	2,688	.0078125	.0880588	0	1
-----+					
pl_ken	2,688	.0078125	.0880588	0	1
pl_ukr	2,688	.0078125	.0880588	0	1
pl_tcd	2,688	.0078125	.0880588	0	1
pl_zmb	2,688	.0078125	.0880588	0	1
pl_tkm	2,688	.0078125	.0880588	0	1
-----+					
pl_lso	2,688	.0078125	.0880588	0	1
pl_col	2,688	.0078125	.0880588	0	1
pl_blr	2,688	.0078125	.0880588	0	1
pl_pan	2,688	.0078125	.0880588	0	1
pl_per	2,688	.0078125	.0880588	0	1
-----+					
pl_hnd	2,688	.0078125	.0880588	0	1
pl_sgp	2,688	.0078125	.0880588	0	1
pl_pry	2,688	.0078125	.0880588	0	1
pl_gnb	2,688	.0078125	.0880588	0	1
pl_mmr	2,688	.0078125	.0880588	0	1
-----+					
pl_tha	2,688	.0078125	.0880588	0	1
pl_gin	2,688	.0078125	.0880588	0	1
pl_rus	2,688	.0078125	.0880588	0	1
pl_bdi	2,688	.0078125	.0880588	0	1
pl_mrt	2,688	.0078125	.0880588	0	1
-----+					
pl_arg	2,688	.0078125	.0880588	0	1
pl_mkd	2,688	.0078125	.0880588	0	1
pl_tls	2,688	.0078125	.0880588	0	1
pl_bfa	2,688	.0078125	.0880588	0	1
pl_eth	2,688	.0078125	.0880588	0	1
-----+					
pl_irn	2,688	.0078125	.0880588	0	1
pl_afg	2,688	.0078125	.0880588	0	1
pl_ury	2,688	.0078125	.0880588	0	1
pl_mdg	2,688	.0078125	.0880588	0	1
pl_com	2,688	.0078125	.0880588	0	1
-----+					
pl_gtm	2,688	.0078125	.0880588	0	1
pl_vut	2,688	.0078125	.0880588	0	1
pl_egy	2,688	.0078125	.0880588	0	1

pl_hti		2,688	.0078125	.0880588	0	1
pl_civ		2,688	.0078125	.0880588	0	1
-----+						
pl_mng		2,688	.0078125	.0880588	0	1
pl_gha		2,688	.0078125	.0880588	0	1
pl_cri		2,688	.0078125	.0880588	0	1
pl_uqa		2,688	.0078125	.0880588	0	1
pl_swz		2,688	.0078125	.0880588	0	1
-----+						
pl_ben		2,688	.0078125	.0880588	0	1
pl_cod		2,688	.0078125	.0880588	0	1
pl_eri		2,688	.0078125	.0880588	0	1
pl_jor		2,688	.0078125	.0880588	0	1
pl_chl		2,688	.0078125	.0880588	0	1
-----+						
pl_zwe		2,688	.0078125	.0880588	0	1
pl_sdn		2,688	.0078125	.0880588	0	1
pl_tza		2,688	.0078125	.0880588	0	1
pl_blz		2,688	.0078125	.0880588	0	1
pl_mus		2,688	.0078125	.0880588	0	1
-----+						
pl_kor		2,688	.0078125	.0880588	0	1
pl_tur		2,688	.0078125	.0880588	0	1
pl_aze		2,688	.0078125	.0880588	0	1
pl_irq		2,688	.0078125	.0880588	0	1
pl_lao		2,688	.0078125	.0880588	0	1
-----+						
pl_lbr		2,688	.0078125	.0880588	0	1
pl_btn		2,688	.0078125	.0880588	0	1
pl_ind		2,688	.0078125	.0880588	0	1
pl_brn		2,688	.0078125	.0880588	0	1
pl_cmr		2,688	.0078125	.0880588	0	1
-----+						
pl_bhr		2,688	.0078125	.0880588	0	1
pl_zaf		2,688	.0078125	.0880588	0	1
pl_chn		2,688	.0078125	.0880588	0	1
pl_ecu		2,688	.0078125	.0880588	0	1
pl_npl		2,688	.0078125	.0880588	0	1
-----+						
pl_mne		2,688	.0078125	.0880588	0	1
pl_slv		2,688	.0078125	.0880588	0	1
pl_sen		2,688	.0078125	.0880588	0	1
pl_khm		2,688	.0078125	.0880588	0	1
pl_mda		2,688	.0078125	.0880588	0	1
-----+						
pl_bgd		2,688	.0078125	.0880588	0	1
pl_gab		2,688	.0078125	.0880588	0	1
pl_lka		2,688	.0078125	.0880588	0	1
pl_ago		2,688	.0078125	.0880588	0	1

pl_are	2,688	.0078125	.0880588	0	1
pl_dza	2,688	.0078125	.0880588	0	1
pl_uzb	2,688	.0078125	.0880588	0	1
pl_tjk	2,688	.0078125	.0880588	0	1
pl_ssd	2,688	.0078125	.0880588	0	1
pl_moz	2,688	.0078125	.0880588	0	1
pl_brb	2,688	.0078125	.0880588	0	1
pl_gmb	2,688	.0078125	.0880588	0	1
pl_bhs	2,688	.0078125	.0880588	0	1
pl_cog	2,688	.0078125	.0880588	0	1
pl_bol	2,688	.0078125	.0880588	0	1
pl_hkg	2,688	.0078125	.0880588	0	1
pl_phl	2,688	.0078125	.0880588	0	1
pl_mwi	2,688	.0078125	.0880588	0	1
pl_nam	2,688	.0078125	.0880588	0	1
pl_idn	2,688	.0078125	.0880588	0	1
pl_mli	2,688	.0078125	.0880588	0	1
pl_rwa	2,688	.0078125	.0880588	0	1
pl_jam	2,688	.0078125	.0880588	0	1
pl_vnm	2,688	.0078125	.0880588	0	1
pl_dji	2,688	.0078125	.0880588	0	1
pl_srb	2,688	.0078125	.0880588	0	1
pl_cpv	2,688	.0078125	.0880588	0	1
pl_nic	2,688	.0078125	.0880588	0	1
pl_dom	2,688	.0078125	.0880588	0	1
pl_isr	2,688	.0078125	.0880588	0	1
pl_guy	2,688	.0078125	.0880588	0	1
pl_gnq	2,688	.0078125	.0880588	0	1
pl_arm	2,688	.0078125	.0880588	0	1
pl_nga	2,688	.0078125	.0880588	0	1
pl_sau	2,688	.0078125	.0880588	0	1
pl_caf	2,688	.0078125	.0880588	0	1
pl_png	2,688	.0078125	.0880588	0	1
pl_omn	2,688	.0078125	.0880588	0	1
pl_tun	2,688	.0078125	.0880588	0	1
y2016	2,688	.047619	.2129985	0	1
y2015	2,688	.047619	.2129985	0	1
y2014	2,688	.047619	.2129985	0	1
y2013	2,688	.047619	.2129985	0	1
y2012	2,688	.047619	.2129985	0	1
y2011	2,688	.047619	.2129985	0	1

y2010	2,688	.047619	.2129985	0	1
y2009	2,688	.047619	.2129985	0	1
y2008	2,688	.047619	.2129985	0	1
y2007	2,688	.047619	.2129985	0	1
y2006	2,688	.047619	.2129985	0	1
y2005	2,688	.047619	.2129985	0	1
y2004	2,688	.047619	.2129985	0	1
y2003	2,688	.047619	.2129985	0	1
y2002	2,688	.047619	.2129985	0	1
y2001	2,688	.047619	.2129985	0	1
y2000	2,688	.047619	.2129985	0	1
y1999	2,688	.047619	.2129985	0	1
y1998	2,688	.047619	.2129985	0	1
y1997	2,688	.047619	.2129985	0	1
y1996	2,688	.047619	.2129985	0	1
incomegrou~e	2,688	1.351563	.9321559	0	3
icrgbureau~l	1,948	1.792822	.8605824	0	4
reg_qual	2,646	-.3847464	.7692064	-2.625506	2.260543
natur_resouc	2,630	10.19251	12.85051	0	86.45256
capi_invest	2,464	22.50705	8.22558	-2.424358	69.67278
fdi_inflow	2,605	4.381597	7.457086	-37.15476	161.8237
inflation	2,623	13.43871	111.6655	-36.56478	4800.532
gov_cons	2,464	14.65795	7.205058	.9112346	135.8094
trade_open	2,553	82.55177	50.85667	.0268885	442.62
lgdp_pcap	2,630	7.826297	1.239249	5.233868	11.08006
icrgcorr	1,948	2.301099	.8642852	0	5
icrgdemoacc	1,948	3.479188	1.48624	0	6
icrgethntens	1,948	3.909565	1.277312	0	6
icrgexterc~t	1,948	9.792411	1.461586	2.208333	12
icrggovstab	1,948	8.46195	1.635959	2.916667	12
icrgintnal~t	1,948	8.74766	1.721887	.4166667	12
icrginvest~f	1,948	7.677319	2.013979	0	12
icrglaword	1,948	3.322296	1.106788	.5	6
icrgmilipo~t	1,948	3.227841	1.587248	0	6
icrgreligt~s	1,948	4.390657	1.403802	0	6
icrgsocioc~d	1,948	4.734578	2.083756	0	11
wdicapiinv~p	2,464	22.50705	8.22558	-2.424358	69.67278
wdigdp~p	2,630	5448.3	8370.515	187.5167	64864.72
wdigovcons~p	2,464	14.65795	7.205058	.9112346	135.8094
wdiinflati~r	2,623	13.43871	111.6655	-36.56478	4800.532

wdinature~p		2,630	10.19251	12.85051	0	86.45256
wdinetinfl~p		2,605	4.381597	7.457086	-37.15476	161.8237
wditradepe~p		2,553	82.55177	50.85667	.0268885	442.62
wgiconcorr		2,646	-.4404914	.7361553	-1.805882	2.32558
wgigoveff		2,646	-.4031882	.7406782	-2.353382	2.436975
-----+-----						
wgipolistab		2,646	-.4042585	.8668155	-3.180798	1.495759
wgiregqual		2,646	-.3847464	.7692064	-2.625506	2.260543
wgirulelaw		2,646	-.4766641	.7258849	-2.24108	1.860729
wgivoiacc		2,646	-.4515899	.7744735	-2.389	1.342969
year		2,688	2006	6.056427	1996	2016
-----+-----						
gdp_pcap		2,630	5448.3	8370.515	187.5167	64864.71

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```

18 .
19 . * As mentioned in the paper, the difference GMM will be used.
20 . * Lag 3 of lgdp_pcap is considered as GMM-IV to ensure no serial correlation
    > in Abond test for AR (3),
21 . * and to test Sargan test for IV overidentifying restrictions, the vce(gmm)
    > is used (default).
22 .
23 . * base
24 .
25 . tsset country_id year
    panel variable:  country_id (strongly balanced)
    time variable:   year, 1996 to 2016
    delta: 1 unit

26 .
27 . xtdpd l(0/1).lgdp_pcap svmci trade_open inflation gov_consue fdi_inflow ///
    > capi_invest natur_resouc y* ///
    > , dgmiv(lgdp_pcap,lag(3)) lgmmiv(lgdp_pcap,lag(3)) ///
    > iv(svmci trade_open inflation gov_consue fdi_inflow ///
    > capi_invest natur_resouc y* ) twostep artests(3)
note: y2016 dropped from iv() because of collinearity
note: y1997 dropped from iv() because of collinearity
note: y1996 dropped from iv() because of collinearity
note: year dropped from iv() because of collinearity
note: y2016 dropped because of collinearity
note: y1997 dropped because of collinearity
note: y1996 dropped because of collinearity
note: D.year dropped because of collinearity

```

Dynamic panel-data estimation  
Group variable: country\_id  
Time variable: year

Number of obs = 1,738  
Number of groups = 94

Obs per group:  
min = 5  
avg = 18.48936  
max = 20

Number of instruments = 214

Wald chi2(26) = 6.12e+06  
Prob > chi2 = 0.0000

# Two-step results

lgdp_pcap	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
lgdp_pcap						
L1.	.9652861	.0016724	577.17	0.000	.9620082	.9685641
svmc	.0864625	.0066848	12.93	0.000	.0733606	.0995645
trade_open	.0001338	.0000113	11.82	0.000	.0001116	.000156
inflation	-.0000491	.0000373	-1.32	0.187	-.0001221	.0000239
gov_cons	.0011338	.000193	5.87	0.000	.0007555	.0015121
fdi_inflow	-.0002712	.000018	-15.06	0.000	-.0003065	-.0002359
capi_invest	.0018837	.0001417	13.29	0.000	.001606	.0021613
natur_resouc	.0001664	.0000631	2.63	0.008	.0000426	.0002901
y2015	-.002169	.0008997	-2.41	0.016	-.0039324	-.0004057
y2014	.0051635	.0010308	5.01	0.000	.0031431	.0071839
y2013	.0128104	.0014203	9.02	0.000	.0100266	.0155942
y2012	.0130685	.0014167	9.22	0.000	.0102918	.0158451
y2011	.014853	.0013502	11.00	0.000	.0122066	.0174993
y2010	.0199987	.0019005	10.52	0.000	.0162738	.0237237
y2009	-.0212462	.0017474	-12.16	0.000	-.0246711	-.0178212
y2008	.0094535	.0015546	6.08	0.000	.0064065	.0125005
y2007	.0243588	.0017819	13.67	0.000	.0208663	.0278513
y2006	.0249296	.0017171	14.52	0.000	.0215642	.028295
y2005	.0188911	.0013075	14.45	0.000	.0163284	.0214537
y2004	.0222833	.0017142	13.00	0.000	.0189235	.0256431
y2003	.0062159	.0015705	3.96	0.000	.0031379	.009294
y2002	-.0012299	.0015913	-0.77	0.440	-.0043489	.001889
y2001	-.005535	.0020164	-2.74	0.006	-.0094871	-.0015829
y2000	-.0009246	.0022277	-0.42	0.678	-.0052909	.0034417
y1999	-.0078181	.0019893	-3.93	0.000	-.011717	-.0039191
y1998	-.0168693	.0024851	-6.79	0.000	-.02174	-.0119987
_cons	.2058084	.0121789	16.90	0.000	.1819382	.2296786

# Instruments for differenced equation

GMM-type: L(3/.)lgdp\_pcap

Standard: D.svmci D.trade\_open D.inflation D.gov\_cons D.fdi\_inflow  
D.capi\_invest D.natur\_resouc D.y2015 D.y2014 D.y2013  
D.y2012 D.y2011 D.y2010 D.y2009 D.y2008 D.y2007 D.y2006

```

D.y2005 D.y2004 D.y2003 D.y2002 D.y2001 D.y2000 D.y1999
D.y1998
Instruments for level equation
GMM-type: L3D.lgdp_pcap
Standard: svmci trade_open inflation gov_cons fdi_inflow
capi_invest natur_resouc y2015 y2014 y2013 y2012 y2011
y2010 y2009 y2008 y2007 y2006 y2005 y2004 y2003 y2002
y2001 y2000 y1999 y1998 _cons

28 .
29 . estat abond

Arellano-Bond test for zero autocorrelation in first-differenced errors
+-----+
| Order | z      Prob > z |
+-----+-----+
| 1     |-4.8007 0.0000 |
| 2     |-2.8009 0.0051 |
| 3     |.35788 0.7204 |
+-----+-----+
H0: no autocorrelation

30 . estat sargan
Sargan test of overidentifying restrictions
H0: overidentifying restrictions are valid

chi2(187)    = 72.51174
Prob > chi2  = 1.0000

31 .
32 . outreg2 using "resultgmm.xls", replace
resultgmm.xls
dir : seeout

33 .
34 . * +cc^2
35 .

```



```

36 . xtdpd l(0/1).lgdp_pcap svmci svmci_sqr trade_open gov_consue inflation fdi_in
> flow ///
> capi_invest natur_resouc y* ///
> , dgmiv(lgdp_pcap, lag(3)) lgmmiv(lgdp_pcap,lag(3)) ///
> iv(svmci trade_open gov_consue inflation fdi_inflow ///
> capi_invest natur_resouc y*) twostep artests(3)
note: y2016 dropped from iv() because of collinearity
note: y1997 dropped from iv() because of collinearity
note: y1996 dropped from iv() because of collinearity
note: year dropped from iv() because of collinearity
note: y2016 dropped because of collinearity
note: y1997 dropped because of collinearity
note: y1996 dropped because of collinearity
note: D.year dropped because of collinearity

```

Dynamic panel-data estimation  
Group variable: country\_id  
Time variable: year

Number of obs = 1,738  
Number of groups = 94

Obs per group:  
min = 5  
avg = 18.48936  
max = 20

Number of instruments = 214

Wald chi2(27) = 4.97e+06  
Prob > chi2 = 0.0000

#### Two-step results

lgdp_pcap	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
lgdp_pcap						
L1.	.967376	.0019608	493.36	0.000	.9635328	.9712191
svmci	.2858592	.026523	10.78	0.000	.2338751	.3378433
svmci_sqr	-.2441714	.0364967	-6.69	0.000	-.3157036	-.1726392
trade_open	.000125	.0000103	12.12	0.000	.0001048	.0001452
gov_consue	.0010418	.0001839	5.66	0.000	.0006813	.0014023
inflation	-.0000577	.0000297	-1.95	0.051	-.0001159	3.72e-07
fdi_inflow	-.0002122	.0000247	-8.58	0.000	-.0002606	-.0001637
capi_invest	.0021019	.0001258	16.71	0.000	.0018554	.0023485
natur_resouc	.000097	.0000591	1.64	0.101	-.0000189	.000213
y2015	-.0012632	.0009549	-1.32	0.186	-.0031348	.0006083
y2014	.0077414	.0011812	6.55	0.000	.0054263	.0100566
y2013	.0157991	.001602	9.86	0.000	.0126593	.018939
y2012	.0167231	.0015524	10.77	0.000	.0136804	.0197658
y2011	.0193357	.0014531	13.31	0.000	.0164877	.0221837
y2010	.0240362	.0018081	13.29	0.000	.0204924	.02758
y2009	-.0190588	.0018799	-10.14	0.000	-.0227433	-.0153743
y2008	.0122572	.00137	8.95	0.000	.009572	.0149423
y2007	.0269872	.0015255	17.69	0.000	.0239973	.029977

y2006		.0280912	.0015145	18.55	0.000	.0251228	.0310596
y2005		.021904	.0014399	15.21	0.000	.0190819	.0247262
y2004		.02557	.001478	17.30	0.000	.0226731	.0284669
y2003		.009152	.0015154	6.04	0.000	.006182	.012122
y2002		.0013453	.0014601	0.92	0.357	-.0015166	.0042071
y2001		-.0025807	.0018984	-1.36	0.174	-.0063015	.0011401
y2000		.0005971	.0016003	0.37	0.709	-.0025393	.0037335
y1999		-.0069272	.0018912	-3.66	0.000	-.010634	-.0032204
y1998		-.0176755	.0024131	-7.32	0.000	-.022405	-.012946
_cons		.1597508	.0142556	11.21	0.000	.1318104	.1876912

-----  
Instruments for differenced equation

GMM-type: L(3/.) .lgdp\_pcap

Standard: D.svmci D.trade\_open D.gov\_cons D.inflation D.fdi\_inflow  
D.capi\_invest D.natur\_resouc D.y2015 D.y2014 D.y2013  
D.y2012 D.y2011 D.y2010 D.y2009 D.y2008 D.y2007 D.y2006  
D.y2005 D.y2004 D.y2003 D.y2002 D.y2001 D.y2000 D.y1999  
D.y1998

Instruments for level equation

GMM-type: L3D.lgdp\_pcap

Standard: svmci trade\_open gov\_cons inflation fdi\_inflow  
capi\_invest natur\_resouc y2015 y2014 y2013 y2012 y2011  
y2010 y2009 y2008 y2007 y2006 y2005 y2004 y2003 y2002  
y2001 y2000 y1999 y1998 \_cons

37 .

38 . estat abond

Arellano-Bond test for zero autocorrelation in first-differenced errors

+-----+		
Order	z	Prob >  z
+-----+		
1	-4.8124	0.0000
2	-2.8115	0.0049
3	.46384	0.6428
+-----+		

H0: no autocorrelation

```

39 . estat sargan
    Sargan test of overidentifying restrictions
        H0: overidentifying restrictions are valid

        chi2(186)      =   75.01253
        Prob > chi2    =    1.0000

40 .
41 . outreg2 using "resultgmm.xls", append
    resultgmm.xls
    dir : seeout

42 .
43 . * +rq
44 .
45 . xtdpd l(0/1).lgdp_pcap svmci svmci_sqr trade_open gov_consue inflation fdi_in
    > flow ///
    > capi_invest natur_resouc reg_qual y* ///
    > , dgmiv(lgdp_pcap,lag(3)) lgmmiv(lgdp_pcap,lag(3)) ///
    > iv(svmci trade_open gov_consue inflation fdi_inflow ///
    > capi_invest natur_resouc wgireg y*) twostep artests(3)
note: y2016 dropped from iv() because of collinearity
note: y1997 dropped from iv() because of collinearity
note: y1996 dropped from iv() because of collinearity
note: year dropped from iv() because of collinearity
note: y2016 dropped because of collinearity
note: y1997 dropped because of collinearity
note: y1996 dropped because of collinearity
note: D.year dropped because of collinearity

Dynamic panel-data estimation
Group variable: country_id
Time variable: year

Number of obs      =      1,738
Number of groups   =        94

Obs per group:
    min =          5
    avg =     18.48936
    max =         20

```

Number of instruments = 215                      Wald chi2(28) = 1.63e+07  
 Prob > chi2 = 0.0000

Two-step results

lgdp_pcap	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
lgdp_pcap						
L1.	.9660242	.0018064	534.79	0.000	.9624838	.9695646
svmci	.2459438	.0314239	7.83	0.000	.1843541	.3075336
svmci_sqr	-.2535554	.0384597	-6.59	0.000	-.328935	-.1781759
trade_open	.0000558	.0000136	4.11	0.000	.0000292	.0000825
gov_cons	.0005577	.0001852	3.01	0.003	.0001947	.0009207
inflation	3.04e-06	.0000354	0.09	0.932	-.0000664	.0000724
fdi_inflow	-.0002313	.0000234	-9.89	0.000	-.0002771	-.0001854
capi_invest	.0017682	.0001293	13.67	0.000	.0015148	.0020217
natur_resouc	.0006047	.0000442	13.70	0.000	.0005182	.0006913
reg_qual	.0284943	.0021237	13.42	0.000	.0243319	.0326566
y2015	-.0015183	.0006658	-2.28	0.023	-.0028234	-.0002133
y2014	.0055817	.0011281	4.95	0.000	.0033706	.0077928
y2013	.0134961	.0019155	7.05	0.000	.0097418	.0172503
y2012	.0137632	.0017389	7.91	0.000	.010355	.0171713
y2011	.015771	.0017546	8.99	0.000	.012332	.0192099
y2010	.0216151	.001687	12.81	0.000	.0183086	.0249216
y2009	-.019928	.0017373	-11.47	0.000	-.0233331	-.016523
y2008	.0106056	.002133	4.97	0.000	.0064251	.0147861
y2007	.0254884	.0021526	11.84	0.000	.0212694	.0297074
y2006	.0255787	.0021668	11.80	0.000	.0213318	.0298255
y2005	.0200953	.0016988	11.83	0.000	.0167657	.023425
y2004	.0247941	.0022362	11.09	0.000	.0204112	.0291771
y2003	.0075636	.0018386	4.11	0.000	.00396	.0111672
y2002	-.0001024	.002088	-0.05	0.961	-.0041948	.0039901
y2001	-.003461	.0019702	-1.76	0.079	-.0073226	.0004005
y2000	-.001602	.001704	-0.94	0.347	-.0049418	.0017378
y1999	-.0091387	.0014582	-6.27	0.000	-.0119967	-.0062807
y1998	-.0193972	.0027771	-6.98	0.000	-.0248402	-.0139541
_cons	.2032779	.0167019	12.17	0.000	.1705427	.2360131

Instruments for differenced equation

GMM-type: L(3/.)lgdp\_pcap  
 Standard: D.svmci D.trade\_open D.gov\_cons D.inflation D.fdi\_inflow  
 D.capi\_invest D.natur\_resouc D.wgiregqual D.y2015 D.y2014  
 D.y2013 D.y2012 D.y2011 D.y2010 D.y2009 D.y2008 D.y2007  
 D.y2006 D.y2005 D.y2004 D.y2003 D.y2002 D.y2001 D.y2000  
 D.y1999 D.y1998

Instruments for level equation

GMM-type: L3D.lgdp\_pcap  
 Standard: svmci trade\_open gov\_cons inflation fdi\_inflow  
 capi\_invest natur\_resouc wgiregqual y2015 y2014 y2013

```

y2012 y2011 y2010 y2009 y2008 y2007 y2006 y2005 y2004
y2003 y2002 y2001 y2000 y1999 y1998 _cons

```

```

46 .
47 . estat abond

```

Arellano-Bond test for zero autocorrelation in first-differenced errors

Order	z	Prob >  z
1	-4.7067	0.0000
2	-2.7919	0.0052
3	.59569	0.5514

H0: no autocorrelation

```

48 . estat sargan
Sargan test of overidentifying restrictions
H0: overidentifying restrictions are valid

```

```

chi2(186)    = 71.97337
Prob > chi2  = 1.0000

```

```

49 .
50 . outreg2 using "resultgmm.xls", append
resultgmm.xls
dir : seeout

```

```

51 .
52 . * +ci*rq
53 .
54 . xtdpd l(0/1).lgdp_pcap svmci svmci_sqr trade_open gov_consus inflation fdi_in
> flow ///
> capi_invest natur_resouc reg_qual ci_rq y* ///
> , dgmiv(lgdp_pcap, lag(3)) lgmmiv(lgdp_pcap,lag(3)) ///
> iv(svmci trade_open gov_consus inflation fdi_inflow ///
> capi_invest natur_resouc reg_qual y*) twostep artests(3)
note: y2016 dropped from iv() because of collinearity
note: y1997 dropped from iv() because of collinearity
note: y1996 dropped from iv() because of collinearity
note: year dropped from iv() because of collinearity
note: y2016 dropped because of collinearity
note: y1997 dropped because of collinearity
note: y1996 dropped because of collinearity
note: D.year dropped because of collinearity

```

Dynamic panel-data estimation  
Group variable: country\_id  
Time variable: year

Number of obs = 1,738  
Number of groups = 94

Obs per group:  
min = 5  
avg = 18.48936  
max = 20

Number of instruments = 215

Wald chi2(29) = 2.36e+06  
Prob > chi2 = 0.0000

# Two-step results

lgdp_pcap	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
lgdp_pcap						
L1.	.9638478	.0018258	527.91	0.000	.9602693	.9674262
svmc	.5628799	.072274	7.79	0.000	.4212255	.7045344
svmc_sqr	-.7474482	.101851	-7.34	0.000	-.9470726	-.5478239
trade_open	-.0000545	.0000149	-3.66	0.000	-.0000837	-.0000253
gov_cons	.0003855	.0003229	1.19	0.233	-.0002474	.0010183
inflation	-4.72e-06	.0000379	-0.12	0.901	-.000079	.0000695
fdi_inflow	-.0002437	.0000178	-13.68	0.000	-.0002786	-.0002088
capi_invest	.0019956	.0001249	15.98	0.000	.0017508	.0022404
natur_resouc	.000567	.0000878	6.46	0.000	.0003948	.0007391
reg_qual	.0005668	.0034693	0.16	0.870	-.0062329	.0073664
ci_rq	.1385309	.0144914	9.56	0.000	.1101282	.1669336
y2015	-.0009006	.0008064	-1.12	0.264	-.002481	.0006798
y2014	.0071994	.0010421	6.91	0.000	.0051569	.0092419
y2013	.0160967	.0018172	8.86	0.000	.012535	.0196583
y2012	.0178617	.0017847	10.01	0.000	.0143637	.0213597
y2011	.019129	.0016594	11.53	0.000	.0158767	.0223813
y2010	.02581	.001819	14.19	0.000	.0222448	.0293751
y2009	-.0182458	.0014703	-12.41	0.000	-.0211277	-.015364
y2008	.012418	.0017178	7.23	0.000	.0090512	.0157849
y2007	.0271847	.0019939	13.63	0.000	.0232767	.0310927
y2006	.0272306	.0020547	13.25	0.000	.0232035	.0312576
y2005	.023265	.0017642	13.19	0.000	.0198072	.0267228
y2004	.0261979	.002064	12.69	0.000	.0221525	.0302433
y2003	.0080576	.0019833	4.06	0.000	.0041704	.0119448
y2002	-.0001701	.0020944	-0.08	0.935	-.004275	.0039349
y2001	-.0046802	.0018809	-2.49	0.013	-.0083666	-.0009938
y2000	.000226	.0019146	0.12	0.906	-.0035266	.0039786
y1999	-.0054875	.0018166	-3.02	0.003	-.0090479	-.0019271
y1998	-.0232195	.0029981	-7.74	0.000	-.0290958	-.0173432
_cons	.1826069	.0204305	8.94	0.000	.1425639	.2226499

Instruments for differenced equation  
GMM-type: L(3/.)lgdp\_pcap

```

Standard: D.svmci D.trade_open D.gov_cons D.inflation D.fdi_inflow
          D.capi_invest D.natur_resouc D.reg_qual D.y2015 D.y2014
          D.y2013 D.y2012 D.y2011 D.y2010 D.y2009 D.y2008 D.y2007
          D.y2006 D.y2005 D.y2004 D.y2003 D.y2002 D.y2001 D.y2000
          D.y1999 D.y1998

```

Instruments for level equation

```

GMM-type: L3D.lgdp_pcap
Standard: svmci trade_open gov_cons inflation fdi_inflow
          capi_invest natur_resouc reg_qual y2015 y2014 y2013 y2012
          y2011 y2010 y2009 y2008 y2007 y2006 y2005 y2004 y2003
          y2002 y2001 y2000 y1999 y1998 _cons

```

55 .

56 . estat abond

Arellano-Bond test for zero autocorrelation in first-differenced errors

Order	z	Prob > z
1	-4.6321	0.0000
2	-3.0381	0.0024
3	.67309	0.5009

H0: no autocorrelation

57 . estat sargan

Sargan test of overidentifying restrictions

H0: overidentifying restrictions are valid

```

chi2(185)    =   68.67979
Prob > chi2   =    1.0000

```

58 .

59 . outreg2 using "resultgmm.xls", append

resultgmm.xls

dir : seeout

60 .

61 . log close gmmesti

name: gmmesti

log: /Users/timqzhang/hw08-timqzhang/estimation.smcl

log type: text

closed on: 1 Jun 2020, 17:20:58

> -----