table examples

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Table 1: Summary statistics of regression variables (?? countires, ????-????)

	NONDEMOCRACY			DEMOCRACY		
	Observations	Mean	Std.-Dev.	Observations	Mean	Std.-Dev.
ginidisp	1899	39.95	7.70	3420	37.34	9.15
ginimkt	1899	43.82	6.85	3420	46.23	6.31
tax	1043	12.77	6.48	2859	18.48	6.79
sse	2618	47.84	31.80	3224	78.19	29.73

Note: This analysis uses the unbalanced panel data. Data source of Log(Mortality), Log(Population) and population rates of each age group is WHO Mortality database. Log(GNI (constant 2010 USD) per capita) data is from World Bank national accounts data while the data for rest of variables come from OECD database. Short run unemployment is defined as being unemployed for less than 12 months and long-run one is defined as longer than 12 months.

Table 2: XXXPre-tax income

Model Specification	Lag Length–1	Lag Length–5				
	(1)	(2)	(3)	(4)	(5)	(6)
	L.Democracy	L.Democracy	L2.Democracy	L3.Democracy	L4.Democracy	L5.Democracy
Dem. wave t-1	0.60***	0.27*	0.28**	0.24**	0.16*	-0.10
	(0.12)	(0.14)	(0.12)	(0.10)	(0.09)	(0.13)
Dem. wave t-2		0.10	0.02	0.02	-0.00	0.16
		(0.07)	(0.09)	(0.12)	(0.10)	(0.12)
Dem. wave t-3		0.10	0.05	0.02	0.06	0.03
		(0.10)	(0.08)	(0.09)	(0.12)	(0.10)
Dem. wave t-4		0.33***	0.17	0.08	0.03	0.10
		(0.10)	(0.10)	(0.07)	(0.10)	(0.11)
Dem. wave t-5		-0.15	0.19*	0.38***	0.48***	0.51***
		(0.11)	(0.11)	(0.13)	(0.15)	(0.14)
L2.Gini index	-0.01					
	(0.03)					
L3.Gini index	-0.00					
	(0.03)					
L.GDP per capita	-0.00***	-0.00***	-0.00***	-0.00**	-0.00**	-0.00***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Region-Year FE	No	No	No	No	No	No
Partial R^2	0.06	0.07	0.08	0.09	0.09	0.09
SW F-test	13.38	0.72	0.51	0.34	0.22	3.32
$Prob > F$	0.00	0.49	0.60	0.72	0.80	0.04
Observations	4621	4604	4604	4604	4604	4604
AR F-test	4749.20			2185.02		
$Prob > F$	0.00			0.00		

Note:XXXXXXXXXX

Table 3: XXXXPost-tax income

Model Specification	Lag Length–1	Lag Length–5				
	(1)	(2)	(3)	(4)	(5)	(6)
	L.Democracy	L.Democracy	L2.Democracy	L3.Democracy	L4.Democracy	L5.Democracy
Dem. wave t-1	0.60***	0.27*	0.28**	0.24**	0.16*	-0.10
	(0.12)	(0.14)	(0.12)	(0.10)	(0.09)	(0.13)
Dem. wave t-2		0.10	0.02	0.02	-0.00	0.16
		(0.07)	(0.09)	(0.12)	(0.10)	(0.12)
Dem. wave t-3		0.10	0.05	0.02	0.06	0.03
		(0.10)	(0.08)	(0.09)	(0.12)	(0.10)
Dem. wave t-4		0.33***	0.17	0.08	0.03	0.10
		(0.10)	(0.10)	(0.07)	(0.10)	(0.11)
Dem. wave t-5		-0.15	0.19*	0.38***	0.48***	0.51***
		(0.11)	(0.11)	(0.13)	(0.15)	(0.14)
L2.Gini index,	0.00	0.01	0.01	-0.01	-0.02	-0.04
post-tax income	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
L3.Gini index,	-0.01	-0.01	-0.01	0.00	0.02	0.04
post-tax income	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
L.GDP per capita	-0.00***	-0.00***	-0.00***	-0.00**	-0.00**	-0.00***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Region-Year FE	No	No	No	No	No	No
Partial R^2	0.06	0.07	0.08	0.09	0.09	0.09
SW F-test	13.33	0.72	0.51	0.34	0.22	3.32
$Prob > F$	0.00	0.49	0.60	0.72	0.80	0.04
Observations	4621	4604	4604	4604	4604	4604
AR F-test	3645.58			2185.02		
$Prob > F$	0.00			0.00		

Note:XXXXXXXXXX

Table 4: XXXXPrePostFirstStage-tax income

	GiniIndex, post-tax		GiniIndex, pre-tax	
	(1)	(2)	(3)	(4)
	$\triangle$ Democracy,t-1	$\triangle$ Gini index,t-1	$\triangle$ Democracy,t-1	$\triangle$ Gini index,t-1
$\triangle$ Dem.	0.04	0.31***	0.04	0.22**
wave t-1	(0.08)	(0.11)	(0.08)	(0.10)
$\triangle$ Dem.	0.12	0.27**	0.12	0.20*
wave t-2	(0.08)	(0.11)	(0.08)	(0.12)
$\triangle$ Dem.	0.16	0.25**	0.16	0.12
wave t-3	(0.12)	(0.12)	(0.12)	(0.11)
$\triangle$ Dem.	0.34***	0.09	0.34***	0.04
wave t-4	(0.10)	(0.08)	(0.10)	(0.07)
L4.Gini index	-0.00	0.42***	0.00	0.43***
	(0.01)	(0.03)	(0.00)	(0.03)
L5.Gini index	0.00	-0.42***	-0.00	-0.44***
	(0.01)	(0.03)	(0.00)	(0.03)
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Region-Year FE	No	No	No	No
Partial R^2	0.20	0.01	0.20	0.01
SW F-test	55.57	5.35	47.23	5.05
$Prob > F$	0.00	0.00	0.00	0.00
Observations	4433	4433	4433	4433
AR F-test	18.59		19.10	
$Prob > F$	0.00		0.00	

Note:XXXXXXXXXX

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Table 5: XXXXXXXX

	IV/2SLS				IV/System GMM			
	Gini index, Post-tax Income		Gini index, Pre-tax Income		Gini index, Post-tax Income		Gini index, Pre-tax Income	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
L.Democracy	-0.25**	-19.00	-0.31**	-19.00	-0.26**	0.08***	-0.22	0.18***
	(0.13)	(29.41)	(0.15)	(29.41)	(0.12)	(0.03)	(0.13)	(0.03)
L2.Democracy		52.52		52.52		-0.16***		-0.23***
		(119.53)		(119.53)		(0.03)		(0.03)
L3.Democracy		-28.45		-28.45		-0.05***		-0.05***
		(164.07)		(164.07)		(0.01)		(0.01)
L4.Democracy		-11.59		-11.59		-0.04***		-0.04***
		(88.30)		(88.30)		(0.01)		(0.01)
L5.Democracy		6.81		6.81		-0.11***		-0.05***
		(18.03)		(18.03)		(0.01)		(0.01)
L.Gini index	0.97***	0.98***	0.97***	0.98***	1.07***	1.06***	1.06***	1.05***
	(0.01)	(0.07)	(0.01)	(0.07)	(0.02)	(0.01)	(0.02)	(0.01)
L.GDP per capita	0.00**	0.00	0.00***	0.00				
	(0.00)	(0.00)	(0.00)	(0.00)				
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region-Year FE	No	No	No	No	Yes	Yes	Yes	Yes
Hansen over identification test					1.00	1.00	1.00	1.00
AR(2) test					0.04	0.04	0.08	0.07
AR(3) test					0.56	0.42	0.75	0.58
Observations	4621	4604	4621	4604	5114	5067	5114	5067

Note:XXXXXXXXXX

Table 6: XXXXXXXX

	(1)	(2)	(3)	(4)	(5)	(6)
	Compensation of employees (% of expense)	Tax revenue (% of GDP)	School enrollment, primary(% net)	Line1 Line2 Line3	School enrollment, secondary(% gross)	General government final consumption expenditure (% of GDP)
L.Democracy	1.44*	0.67**	0.84*	-0.25*	0.48	0.28*
	(0.84)	(0.30)	(0.44)	(0.14)	(0.38)	(0.15)
L.Compensation of employees (% of expense)	0.84*** (0.04)					
L.Tax revenue (% of GDP)		0.91*** (0.03)				
L.School enrollment, primary (% net)			0.96*** (0.02)			
L.Line1Line2Line3				1.25*** (0.05)		
L.School enrollment, secondary (% gross)					1.04*** (0.02)	
L.General government final consumption expenditure(% of GDP)						0.89*** (0.04)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Region-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Hansen over identification test	1.00	1.00	0.73	1.00	0.23	0.01
AR(2) test	0.98	0.44	0.36	0.20	0.79	0.31
AR(3) test	0.17	0.73	0.89	0.32	0.92	0.13
Observations	3379	3674	3429	4523	5157	6941

Note:XXXXXXXXXX

Table 7: Summary statistics of regression variables (36 countries, 1979-2016)

	Mean	Std. Dev.	Min	Max
Log(M)	-4.74	0.27	-5.54	-4.11
UnemploymentRate	6.70	3.99	0.00	27.47
ShortRun UnemploymentRate	4.89	1.97	1.68	13.79
LongRun UnemploymentRate	2.59	2.68	0.01	19.47
Log(GNI per capita)	10.11	0.75	6.86	11.55
Population rate of group child	0.20	0.05	0.13	0.46
Population rate of group teen	0.14	0.02	0.09	0.22
Population rate of group young	0.15	0.02	0.11	0.20
Population rate of group midage	0.27	0.03	0.14	0.34
Population rate of group senior	0.18	0.04	0.06	0.27
Population rate of group elder	0.06	0.02	0.01	0.13
Population rates of individuals with tertiary degree	27.27	10.74	4.76	56.71
Population rates of individuals with upper secondary degree	43.47	15.66	4.73	76.87
Log(Population)	16.23	1.53	12.33	19.59
Health programme net Expenditure Ratio	5.60	2.12	0.00	15.22
Incapacity programme net Expenditure Ratio	2.51	1.48	0.00	7.14

Note: This analysis uses the unbalanced panel data. Data source of Log(Mortality), Log(Population) and population rates of each age group is WHO Mortality database. Log(GNI (constant 2010 USD) per capita) data is from World Bank national accounts data while the data for rest of variables come from OECD database. Short run unemployment is defined as being unemployed for less than 12 months and long-run one is defined as longer than 12 months.

Table 8: FE estimates (in %) for static models (36 Countries, 1981-2016)

Model Specification	Heterogeneity Eq. 1			None Heterogeneity
	(1) Heterogeneity	(2) Heterogeneity	(3) Non-Heterogeneity	(4) ?
Bust × UnemploymentRate			-0.00296*** (0.0010)	
Boom × UnemploymentRate			-0.00228* (0.0011)	
UnemploymentRate	-0.00599 (0.0054)	0.00237 (0.0025)		-0.00313*** (0.0010)
ExpenditureRatio × UnemploymentRate	0.00215 (0.0020)	-0.00062 (0.0004)		
△× ExpenditureRatio × UnemploymentRate	0.00137*** (0.0004)	0.00037*** (0.0001)		
Country specific time-trend	Yes	Yes	Yes	Yes
Asymmetric effect	Yes	Yes	Yes	No
Expenditure ratio of social program	Incapacity	Health	No	No
Time unit in panel	1 year	1 year	1 year	1 year
Observations	110	112	505	520

*Note: Dependent variable is logarithm of mortality rates and covariates include education level, age, log GNI per capita and panel-specific trends. Regressors having coefficient of interest are listed in the table. Boom and Bust are used to label when boom indicator dummy takes value of 1 and 0 respectively, and △ captures the difference between Boom and Bust. The expenditure ratio is the relative expenditure of such programme to contemporary GDP. Estimation uses the unbalanced panel data from 36 OECD countries and average time span is 15.9 years. Cluster-robust standard errors are reported in the parenthesis. *, **, *** denotes for .1, .005 and .001 significance respectively.*

Table 9: FE estimates (in %) for static model Eq **??** and dynamic decomposition model Eq **??** (36 Countries, 1981-2016)

	(1) Log(M)	(2) Log(M)	(3) Log(M)	(4) Log(M)
—Static:				
UnemploymentRate	-0.00599		0.00237	
	(0.0054)		(0.0025)	
ExpenditureRatio	0.00215		-0.00062	
× UnemploymentRate	(0.0020)		(0.0004)	
△×	0.00137***		0.00037***	
ExpenditureRatio × Unemploy-mentRate	(0.0004)		(0.0001)	
—Short Run:				
ShortRun		-0.00874		0.00971
UnemploymentRate		(0.0121)		(0.0082)
ExpenditureRatio		0.00002		-0.00246*
× ShortRun UnemploymentRate		(0.0039)		(0.0012)
△×		-0.00047		-0.00009
ExpenditureRatio × ShortRun UnemploymentRate		(0.0008)		(0.0003)
—Long Run:				
LongRun		-0.00482		-0.00977
UnemploymentRate		(0.0050)		(0.0074)
ExpenditureRatio		0.00382		0.00171
× LongRun UnemploymentRate		(0.0029)		(0.0015)
△×		0.00191		0.00079*
ExpenditureRatio × LongRun UnemploymentRate		(0.0013)		(0.0004)
Estimator	FE	FE	FE	FE
Country specific time-trend	Yes	Yes	Yes	Yes
General time(year) dummies	No	No	No	No
Asymmetric effect	Yes	Yes	Yes	Yes
Expenditure ratio of social pro-gram	Incapacity	Incapacity	Health	Health
Dynamicism	No	Decomposition	No	Decomposition
Time unit in panel	1 year	1 year	1 year	1 year
Observations	110	108	112	110

*Note: The dependent variable is logarithm of mortality and covariates include education level, age, log GNI per capita and panel-specific trends. Regressors having coefficient of interest are listed in the table. Boom and Bust, ShortRun Boom and ShortRun Bust, LongRun Boom and LongRun Bust are used to label value 1 and 0 respectively of boom indicator dummy in corresponding context. For example, boom indicator is obtained from unemployment in static model and short-run, long-run unemployment in dynamic decomposition model. △ captures the difference between Boom and Bust in corresponding setting. The expenditure ratio is the relative expenditure of such programme to contemporary GDP. Dynamism of decomposition stands for decomposition of unemployment into short and long run. Estimation uses the unbalanced panel data from 36 OECD countries and average time span is 15.9 years. Cluster-robust standard errors are reported in the parenthesis. *, **, *** denotes for .1, .005 and .001 significance respectively.*

Table 10: GMM and bias-corrected LSDV Estimates (in %) for dynamic Koyck lag model Eq **??** (36 Countries, 1981-2016)

	(1) Log(M)	(2) Log(M)	(3) Log(M)	(4) Log(M)	(5) Log(M)	(6) Log(M)	(7) Log(M)	(8) Log(M)	(9) Log(M)	(10) Log(M)
—Static:										
UnemploymentRate	-0.00599					0.00237				
	(0.0054)					(0.0025)				
Boom × ExpenditureRatio × UnemploymentRate	0.00137***					0.00037***				
	(0.0004)					(0.0001)				
ExpenditureRatio × UnemploymentRate	0.00215					-0.00062				
	(0.0020)					(0.0004)				
—Contemporary effects:										
UnemploymentRate		0.03345	0.00716	0.00277	0.00659		-0.00409	-0.00073	-0.00032	-0.00133
		(0.0235)	(.)	(0.0028)	(.)		(0.0131)	(.)	(0.0107)	(.)
Boom × ExpenditureRatio × UnemploymentRate		-0.00007	0.00003	0.00037*	0.00008		0.00005	0.00010	0.00016	0.00011
		(0.0008)	(.)	(0.0002)	(.)		(0.0002)	(.)	(0.0009)	(.)
ExpenditureRatio × UnemploymentRate		-0.01087*	-0.00379	-0.00093	-0.00357		0.00067	-0.00013	0.00011	-0.00004
		(0.0063)	(.)	(0.0011)	(.)		(0.0018)	(.)	(0.0015)	(.)
—Accumulative effects:										
UnemploymentRate		0.03846	0.02066	0.00694	0.02946		-0.00837	-0.00287	-0.00083	-0.00748
		(0.0562)	(.)	(0.0077)	(.)		(0.0306)	(.)	(0.0284)	(.)
Boom × ExpenditureRatio × UnemploymentRate		-0.00008	0.00008	0.00093	0.00036		0.00010	0.00038	0.00043	0.00062
		(0.0008)	(.)	(0.0007)	(.)		(0.0004)	(.)	(0.0027)	(.)
ExpenditureRatio × UnemploymentRate		-0.01250	-0.01095	-0.00232	-0.01595		0.00137	-0.00051	0.00030	-0.00023
		(0.0188)	(.)	(0.0029)	(.)		(0.0045)	(.)	(0.0041)	(.)
Estimator	FE					FE				
Initial consistent estimates used in bias correction for LSDV										
Country specific time-trend	Yes					Yes				
General time(year) dummies	No					No				
Asymmetric effect	Yes					Yes				
Expenditure ratio of social program	Incapacity					Health				
Dynamicism	No					No				
Time unit in panel	1 year					1 year				
N	110	76	109	119	109	112	77	110	120	110

*Note: The dependent variable is logarithm of mortality and covariates include the first lagged logarithm of mortality rates, education level, age, log GNI per capita and panel-specific trends. Regressors having coefficient of interest are listed in the table. Boom and Bust are used to label value 1 and 0 respectively of boom indicator dummy; △ captures the difference between Boom and Bust. The expenditure ratio is the relative expenditure of such programme to contemporary GDP. In Koyck lag model, the direct estimates (say β) from regression stand for contemporary effects and the corresponding accumulative effect $\ddot{\beta}$ is equal to $\beta/(1-\eta) - \beta$ where η is the estimates of lagged dependent variable. Estimation in static model (Eq **??**) uses the unbalanced panel data from 36 OECD countries and average time span is 15.9 years while 36 OECD countries and average time span is 4.5 years in dynamic Koyck model (Eq **??**). Difference System GMM estimator do not exploit all lags and the reasonable lag length (up to 4th lag of $it for IVs for i, t-1$ in Difference GMM and 2nd lag for IVs for $i, t-1 in System GMM$) is chosen according to Sanderson − Windmeijer individual conditional under identification test for weak IVs. The rest regressors instrument by themselves. ? specifies more accurate bias in LSDV which includes two terms of at most order $^{-1}$, and $(NT)^{-1}$, respectively. 2nd-Step cluster-robust standard errors for GMM estimators and Bootstrap standard errors with repetition of 50 times standard errors for LSDV estimators are reported in the parenthesis. *, **, *** denotes for .1, .005 and .001 significance respectively.*

Table 11: GMM and bias-corrected LSDV Estimates (in %) for dynamic Koyck lag model Eq **??** (36 Countries, 1981-2016)

	(1) Log(M)	(2) Log(M)	(3) Log(M)	(4) Log(M)	(5) Log(M)
Panel A: Incapacity Programme					
—Static:					
UnemploymentRate	-0.00599				
	(0.0054)				
Boom × ExpenditureRatio × UnemploymentRate	0.00137***				
	(0.0004)				
ExpenditureRatio × UnemploymentRate	0.00215				
	(0.0020)				
—Contemporary effects:					
UnemploymentRate		0.03345	0.00716	0.00277	0.00659
		(0.0235)	(.)	(0.0028)	(.)
Boom × ExpenditureRatio × UnemploymentRate		-0.00007	0.00003	0.00037*	0.00008
		(0.0008)	(.)	(0.0002)	(.)
ExpenditureRatio × UnemploymentRate		-0.01087*	-0.00379	-0.00093	-0.00357
		(0.0063)	(.)	(0.0011)	(.)
Observations	110	76	109	119	109
Panel B: Health Programme					
—Static:					
UnemploymentRate	0.00237				
	(0.0025)				
Boom × ExpenditureRatio × UnemploymentRate	0.00037***				
	(0.0001)				
ExpenditureRatio × UnemploymentRate	-0.00062				
	(0.0004)				
—Contemporary effects:					
UnemploymentRate		-0.00409	-0.00073	-0.00032	-0.00133
		(0.0131)	(.)	(0.0107)	(.)
Boom × ExpenditureRatio × UnemploymentRate		0.00005	0.00010	0.00016	0.00011
		(0.0002)	(.)	(0.0009)	(.)
ExpenditureRatio × UnemploymentRate		0.00067	-0.00013	0.00011	-0.00004
		(0.0018)	(.)	(0.0015)	(.)
Observations	112	77	110	120	110
Estimator	FE	Difference GMM	bias-corrected LSDV	System GMM	bias-corrected LSDV
Initial consistent estimates used in bias correction for LSDV			Difference GMM		System GMM
Time unit in panel	1 year	5 year	5 year	5 year	5 year

*Note: The dependent variable is logarithm of mortality and covariates include the first lagged logarithm of mortality rates, education level, age, log GNI per capita and panel-specific trends. Regressors having coefficient of interest are listed in the table. Boom and Bust are used to label value 1 and 0 respectively of boom indicator dummy; $\triangle$ captures the difference between Boom and Bust. The expenditure ratio is the relative expenditure of such programme to contemporary GDP. In Koyck lag model, the direct estimates (say β) from regression stand for contemporary effects and the corresponding accumulative effect $\ddot{\beta}$ is equal to $\beta/(1-\eta) - \beta$ where η is the estimates of lagged dependent variable. Estimation in static model (Eq **??**) uses the unbalanced panel data from 36 OECD countries and average time span is 15.9 years while 36 OECD countries and average time span is 4.5 years in dynamic Koyck model (Eq **??**). Difference System GMM estimator do not exploit all lags and the reasonable lag length (up to 4th lag of it for IVs for $i, t-1$ in Difference GMM and 2nd lag for IVs for $i, t-1$ in System GMM) is chosen according to Sanderson-Windmeijer individual conditional underidentification test for weak IVs. The rest regressors instrument by themselves. **?** specifies more accurate bias in LSDV which includes two terms of at most order $^{-1}$, and $(NT)^{-1}$, respectively. 2nd-Step cluster-robust standard errors*

1 Appendix

Table A.1: FE,POLS,RE estimates (in %) for baseline equation Eq **??** (36 Countries, 1981-2016)

	(1) Log(M)	(2) Log(M)	(3) Log(M)	(4) Log(M)	(5) Log(M)	(6) Log(M)
UnemploymentRate	-0.00313***	-0.00293*	-0.00293*	-0.00291*	-0.00222	-0.00291*
	(0.0010)	(0.0017)	(0.0017)	(0.0017)	(0.0033)	(0.0015)
Country specific time-trend included	Yes	Yes	Yes	No	No	No
General time-trend included	Omitted	Omitted	Omitted	Yes	Yes	Yes
Estimator	FE	POLS	RE	FE	POLS	RE
Correlation between fixed effects and country specifc fitted dependent variable	-1.00			0.40		
Variance of fixed effect	27.34		0.00	0.21		0.10
Variance of idiosyncratic error	0.02		0.02	0.03		0.03
Observations	520	520	520	520	520	520

Note: The dependent variable is logarithm of mortality and regressors include unemployment, education level, age, and log GNI per capita. Fixed effects here refer to the unobserved and observed country specific time-invariant characteristics. Cluster-robust standard errors are reported in the parenthesis. *, **, *** denotes for .1, .005 and .001 significance respectively.

Table A.2: Sanderson-Windmeijer individual conditional underidentification tests for weak IV in Difference GMM estimators (36 countries, 1979-2016)

Expenditure ratio of social program	Incapacity	Incapacity	Incapacity	Incapacity	Incapacity	Health	Health	Health	Health	Health
Maximum lag length	3	4	5	6	7	3	4	5	6	7
P-value of robust Hansen test	0.06	0.14	0.31	0.19	0.29	0.02	0.08	0.22	0.13	0.20
dof of robust hansen test	3.00	7.00	10.00	12.00	13.00	3.00	7.00	10.00	12.00	13.00
Number of IVs	30.00	34.00	37.00	39.00	40.00	30.00	34.00	37.00	39.00	40.00
Time unit in panel	5 year	5 year	5 year	5 year	5 year	5 year	5 year	5 year	5 year	5 year
N	76	76	76	76	76	77	77	77	77	77

Note: Dependent variable is the first lagged logarithm of mortality rates which is endogenoud regressor in Dynamic panel data model and regressors include unemployment, education level, age, log GNI per capita and general time dummies. The expenditure ratio of social program indicates the source of heterogeneity: it can be related to the incapacity or health programme and measured by the relative expenditure of such programme to contemporary GDP. Windmeijer(2018) shows in linear equation specification the robust Hansen test is equivalent to Sanderson-Windmeijer individual conditional underidentification tests for weak IV.

Table A.3: Sanderson-Windmeijer individual conditional underidentification tests for weak IV in System GMM estimators (36 countries, 1979-2016)

Expenditure ratio of social program	Incapacity	Incapacity	Incapacity	Incapacity	Incapacity	Incapacity	Health	Health	Health	Health	Health	Health
Maximum lag length	2	3	4	5	6	7	2	3	4	5	6	7
P-value of robust Hansen test	0.16	0.43	0.48	0.76	0.76	0.87	0.08	0.29	0.32	0.61	0.70	0.93
dof of robust hansen test	10.00	15.00	19.00	22.00	24.00	25.00	10.00	15.00	19.00	22.00	24.00	25.00
Number of IVs	31.00	36.00	40.00	43.00	45.00	46.00	31.00	36.00	40.00	43.00	45.00	46.00
Time unit in panel	5 year	5 year	5 year	5 year	5 year	5 year	5 year	5 year	5 year	5 year	5 year	5 year
N	119	119	119	119	119	119	120	120	120	120	120	120

Note: Dependent variable is the first lagged logarithm of mortality rates which is endogenoud regressor in Dynamic panel data model and regressors are the rest of regressors in Eq ??. Windmeijer(2018) shows in linear equation specification the robust Hansen test is equivalent to Sanderson-Windmeijer individual conditional under-identification tests for weak IV.

Table A.4: Two-step Difference GMM estimates (in %) for dynamic Koyck lag model Eq **??** (36 Countries, 1981-2016)

	Log(M)	Log(M)	Log(M)	Log(M)	Log(M)	Log(M)	Log(M)	Log(M)	Log(M)	Log(M)
—*Contemporary effects*:										
UnemploymentRate	3.345	1.429	2.737**	1.721	1.110	-1.069	-0.409	-1.371	-0.459	-0.582
	(2.35)	(1.62)	(1.18)	(1.06)	(1.58)	(2.90)	(1.31)	(1.93)	(1.39)	(1.10)
Bust × ExpenditureRatio ×	-1.087*	-0.514	-0.785**	-0.628	-0.497	0.132	0.067	0.177	0.064	0.012
UnemploymentRate	(0.63)	(0.55)	(0.30)	(0.38)	(0.52)	(0.28)	(0.18)	(0.23)	(0.16)	(0.13)
△× ExpenditureRatio ×	-0.007	-0.014	0.012	-0.008	0.012	0.007	0.005	0.018	0.013	0.004
UnemploymentRate	(0.08)	(0.08)	(0.08)	(0.08)	(0.10)	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)
—*Accumulative effects*:										
UnemploymentRate	3.846	1.869	3.294	2.289	2.534	-6.256	-0.837	-2.086	-0.849	-2.726
	(5.62)	(2.28)	(3.25)	(3.33)	(3.68)	(31.84)	(3.06)	(4.95)	(3.24)	(7.40)
Bust × ExpenditureRatio ×	-1.250	-0.673	-0.945	-0.835	-1.134	0.774	0.137	0.269	0.118	0.054
UnemploymentRate	(1.88)	(0.89)	(0.87)	(1.21)	(1.59)	(3.50)	(0.45)	(0.64)	(0.40)	(0.65)
△× ExpenditureRatio ×	-0.008	-0.019	0.015	-0.010	0.027	0.039	0.010	0.027	0.024	0.017
UnemploymentRate	(0.08)	(0.10)	(0.10)	(0.10)	(0.27)	(0.17)	(0.04)	(0.07)	(0.06)	(0.11)
Expenditure ratio of social program	Incapacity	Incapacity	Incapacity	Incapacity	Incapacity	Health	Health	Health	Health	Health
Maximum lag length	3	4	5	6	7	3	4	5	6	7
P-value of robust hansen test	0.40	0.22	0.75	0.65	0.82	0.02	0.16	0.61	0.72	1.00
AR(2) P-value	0.70	0.71	0.48	0.76	0.47	0.93	0.95	0.60	0.66	0.66
Number of IVs	30.00	34.00	37.00	39.00	40.00	30.00	34.00	37.00	39.00	40.00
Time unit in panel	5 year	5 year	5 year	5 year	5 year	5 year	5 year	5 year	5 year	5 year
Observations	76	76	76	76	76	77	77	77	77	77

*Note: The dependent variable is logarithm of mortality and covariates include the first lagged logarithm of mortality rates, education level, age, log GNI per capita and panel-specific trends. Regressors having coefficient of interest are listed in the table. Boom and Bust are used to label value 1 and 0 respectively of boom indicator dummy; △ captures the difference between Boom and Bust. The expenditure ratio is the relative expenditure of such programme to contemporary GDP. In Koyck lag model, the direct estimates (say β) from regression stand for contemporary effects and the corresponding accumulative effect $\ddot{\beta}$ is equal to $\beta/(1-\eta) - \beta$ where η is the estimates of lagged dependent variable. There are 36 OECD countries and average time span is 4.5 years in dynamic Koyck model (Eq **??**). The lag length in choosing IVs for the first lagged logarithm of mortality rates is specified and the rest regressors instrument by themselves. 2nd-Step cluster-robust standard errors for GMM estimators are reported in the parenthesis. *, **, *** denotes for .1, .005 and .001 significance respectively.*

Table A.5: Two-step System GMM estimates (in %) for dynamic Koyck lag model Eq **??** (36 Countries, 1981-2016)

	Log(M)	Log(M)	Log(M)	Log(M)	Log(M)	Log(M)	Log(M)	Log(M)	Log(M)	Log(M)	Log(M)	Log(M)
—Contemporary effects:												
UnemploymentRate	0.277	0.294	0.289	0.334	0.345	0.236	-0.032	-0.116	-0.017	-0.183	-0.002	0.022
	(0.27)	(8.55)	(0.28)	(1.55)	(0.58)	(0.30)	(0.77)	(0.25)	(0.38)	(0.51)	(0.44)	(0.48)
Bust × ExpenditureRatio ×	-0.093	-0.099	-0.100	-0.122	-0.096	-0.058	0.011	0.026	0.006	0.039	0.012	0.008
UnemploymentRate	(0.10)	(3.68)	(0.11)	(0.56)	(0.16)	(0.09)	(0.11)	(0.04)	(0.05)	(0.06)	(0.06)	(0.06)
△× ExpenditureRatio ×	0.037*	0.030	0.036	0.033	0.031	0.039	0.016	0.015	0.016	0.020	0.015	0.015
UnemploymentRate	(0.02)	(1.23)	(0.03)	(0.18)	(0.13)	(0.03)	(0.06)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)
—Accumulative effects:												
UnemploymentRate	0.694	0.841	0.872	1.032	1.224	0.870	-0.083	-0.336	-0.061	-0.643	-0.005	0.094
	(0.77)	(33.51)	(0.91)	(4.40)	(2.73)	(1.20)	(2.04)	(0.76)	(1.37)	(1.87)	(1.43)	(2.03)
Bust × ExpenditureRatio ×	-0.232	-0.284	-0.302	-0.378	-0.339	-0.214	0.030	0.075	0.020	0.138	0.040	0.033
UnemploymentRate	(0.27)	(13.50)	(0.32)	(1.52)	(0.76)	(0.36)	(0.30)	(0.11)	(0.17)	(0.23)	(0.18)	(0.27)
△× ExpenditureRatio ×	0.093	0.087	0.110	0.102	0.111	0.145	0.043	0.045	0.056	0.071	0.048	0.063
UnemploymentRate	(0.07)	(4.40)	(0.10)	(0.52)	(0.39)	(0.11)	(0.17)	(0.04)	(0.06)	(0.07)	(0.06)	(0.08)
Expenditure ratio of social program	Incapacity	Incapacity	Incapacity	Incapacity	Incapacity	Incapacity	Health	Health	Health	Health	Health	Health
Maximum lag length	2	3	4	5	6	7	2	3	4	5	6	7
P-value of robust hansen test	0.46	0.67	0.72	0.92	0.93	0.89	0.60	0.86	0.81	0.76	0.89	0.90
AR(2) P-value	0.58	0.97	0.46	0.65	0.48	0.33	0.68	0.43	0.38	0.35	0.38	0.29
Number of IVs	31.00	36.00	40.00	43.00	45.00	46.00	31.00	36.00	40.00	43.00	45.00	46.00
Time unit in panel	5 year	5 year	5 year	5 year	5 year	5 year	5 year	5 year	5 year	5 year	5 year	5 year
Observations	119	119	119	119	119	119	120	120	120	120	120	120

*Note: The dependent variable is logarithm of mortality and covariates include the first lagged logarithm of mortality rates, education level, age, log GNI per capita and panel-specific trends. Regressors having coefficient of interest are listed in the table. Boom and Bust are used to label value 1 and 0 respectively of boom indicator dummy; △ captures the difference between Boom and Bust. The expenditure ratio is the relative expenditure of such programme to contemporary GDP. In Koyck lag model, the direct estimates (say β) from regression stand for contemporary effects and the corresponding accumulative effect $\ddot{\beta}$ is equal to $\beta/(1-\eta)-\beta$ where η is the estimates of lagged dependent variable. There are 36 OECD countries and average time span is 4.5 years in dynamic Koyck model (Eq **??**). The lag length in choosing IVs for the first lagged logarithm of mortality rates is specified and the rest regressors instrument by themselves. 2nd-Step cluster-robust standard errors for GMM estimators are reported in the parenthesis. *, **, *** denotes for .1, .005 and .001 significance respectively.*

Table A.6: Bias-corrected LSDV estimates (in %) with initial estimate as Difference GMM for dynamic Koyck lag model Eq **??** (36 Countries, 1981-2016)

	Log(M)	Log(M)	Log(M)	Log(M)	Log(M)	Log(M)
—Contemporary effects:						
UnemploymentRate	0.680**	0.716***	-0.525	-0.112	-0.073	-1.418**
	(0.28)	(0.27)	(1.10)	(0.33)	(0.32)	(0.62)
Bust × ExpenditureRatio ×	-0.370***	-0.379***	-0.015	-0.009	-0.013	0.118
UnemploymentRate	(0.11)	(0.11)	(0.60)	(0.04)	(0.04)	(0.09)
△× ExpenditureRatio ×	0.006	0.003	0.124	0.011	0.010	0.053***
UnemploymentRate	(0.03)	(0.03)	(0.12)	(0.01)	(0.01)	(0.02)
—Accumulative effects:						
UnemploymentRate	2.455	2.066*	0.979	-0.608	-0.287	2.277**
	(1.58)	(1.16)	(2.04)	(2.01)	(1.30)	(0.99)
Bust × ExpenditureRatio ×	-1.334	-1.095*	0.028	-0.051	-0.051	-0.190
UnemploymentRate	(0.83)	(0.58)	(1.12)	(0.23)	(0.16)	(0.15)
△× ExpenditureRatio ×	0.023	0.008	-0.231	0.058	0.038	-0.085***
UnemploymentRate	(0.13)	(0.10)	(0.22)	(0.08)	(0.05)	(0.03)
Expenditure ratio of social program	Incapacity	Incapacity	Incapacity	Health	Health	Health
The initial estimates used for bias correction	Difference GMM	Difference GMM	Difference GMM	Difference GMM	Difference GMM	Difference GMM
Number of large sample bias approximation terms	1	2	3	1	2	3
Time unit in panel	5 year	5 year	5 year	5 year	5 year	5 year
Observations	109	109	109	110	110	110

*Note: The dependent variable is logarithm of mortality and covariates include the first lagged logarithm of mortality rates, education level, age, log GNI per capita and panel-specific trends. Regressors having coefficient of interest are listed in the table. Boom and Bust are used to label value 1 and 0 respectively of boom indicator dummy; △ captures the difference between Boom and Bust. The expenditure ratio is the relative expenditure of such programme to contemporary GDP. In Koyck lag model, the direct estimates (say β) from regression stand for contemporary effects and the corresponding accumulative effect $\ddot{\beta}$ is equal to $\beta/(1-\eta) - \beta$ where η is the estimates of lagged dependent variable. There are 36 OECD countries and average time span is 4.5 years in dynamic Koyck model (Eq **??**). Bias in LSDV can be approximated by three ways: one term of at most order of T^{-1}, two terms of at most order of T^{-1} and $(NT)^{-1}$ respectively, and three terms of at most order of T^{-1}, $(NT)^{-1}$, and $T^{(-1)}T^{-2}$ respectively, (**????**). Bootstrap standard errors with repetition of 50 times are reported in the parenthesis. *, **, *** denotes for .1, .005 and .001 significance respectively.*

Table A.7: Bias-corrected LSDV estimates (in %) with initial estimate as System GMM for dynamic Koyck lag model Eq **??** (36 Countries, 1981-2016)

	Log(M)	Log(M)	Log(M)	Log(M)	Log(M)	Log(M)
—*Contemporary effects:*						
UnemploymentRate	0.591*	0.659**	-2.679***	-0.204	-0.133	-3.286***
	(0.32)	(0.32)	(0.36)	(0.34)	(0.34)	(0.37)
Bust × ExpenditureRatio ×	-0.335***	-0.357***	0.748***	0.004	-0.004	0.367***
UnemploymentRate	(0.13)	(0.13)	(0.14)	(0.05)	(0.05)	(0.05)
△× ExpenditureRatio ×	0.014	0.008	0.322***	0.013	0.011	0.104***
UnemploymentRate	(0.04)	(0.04)	(0.04)	(0.01)	(0.01)	(0.01)
—*Accumulative effects:*						
UnemploymentRate	5.263	2.946	3.378***	-2.659	-0.748	4.199***
	(5.83)	(2.24)	(0.46)	(6.41)	(2.11)	(0.47)
Bust × ExpenditureRatio ×	-2.984	-1.595	-0.943***	0.054	-0.023	-0.470***
UnemploymentRate	(3.26)	(1.15)	(0.18)	(0.64)	(0.26)	(0.07)
△× ExpenditureRatio ×	0.127	0.036	-0.406***	0.171	0.062	-0.133***
UnemploymentRate	(0.41)	(0.19)	(0.05)	(0.27)	(0.08)	(0.02)
Expenditure ratio of social program	Incapacity	Incapacity	Incapacity	Health	Health	Health
The initial estimates used for bias correction	System GMM	System GMM	System GMM	System GMM	System GMM	System GMM
Number of large sample bias approximation terms	1	2	3	1	2	3
Time unit in panel	5 year	5 year	5 year	5 year	5 year	5 year
Observations	109	109	109	110	110	110

*Note: The dependent variable is logarithm of mortality and covariates include the first lagged logarithm of mortality rates, education level, age, log GNI per capita and panel-specific trends. Regressors having coefficient of interest are listed in the table. Boom and Bust are used to label value 1 and 0 respectively of boom indicator dummy; △ captures the difference between Boom and Bust. The expenditure ratio is the relative expenditure of such programme to contemporary GDP. In Koyck lag model, the direct estimates (say β) from regression stand for contemporary effects and the corresponding accumulative effect $\ddot{\beta}$ is equal to $\beta/(1-\eta) - \beta$ where η is the estimates of lagged dependent variable. There are 36 OECD countries and average time span is 4.5 years in dynamic Koyck model (Eq **??**). Bias in LSDV can be approximated by three ways: one term of at most order of T^{-1}, two terms of at most order of T^{-1} and $(NT)^{-1}$ respectively, and three terms of at most order of T^{-1}, $(NT)^{-1}$, and $T^{(} - 1)T^{-2}$ respectively, (**????**). Bootstrap standard errors with repetition of 50 times are reported in the parenthesis. *, **, *** denotes for .1, .005 and .001 significance respectively.*

Table A.8: Definitions from the World Bank

Variables	Definitions
Tax revenue (% of GDP)	Tax revenue refers to compulsory transfers to the central government for public purposes. Certain compulsory transfers such as fines, penalties, and most social security contributions are excluded. Refunds and corrections of erroneously collected tax revenue are treated as negative revenue.
School enrollment, secondary (% net)	Gross enrollment ratio is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Secondary education completes the provision of basic education that began at the primary level, and aims at laying the foundations for lifelong learning and human development, by offering more subject- or skill-oriented instruction using more specialized teachers.
GDP per capita	GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollars.
School enrollment, primary (% net)	Net enrollment rate is the ratio of children of official school age who are enrolled in school to the population of the corresponding official school age. Primary education provides children with basic reading, writing, and mathematics skills along with an elementary understanding of such subjects as history, geography, natural science, social science, art, and music.
Domestic general government health expenditure (% of GDP)	Public expenditure on health from domestic sources as a share of the economy as measured by GDP.
Government expenditure on education, total (% of GDP)	General government expenditure on education (current, capital, and transfers) is expressed as a percentage of GDP. It includes expenditure funded by transfers from international sources to government. General government usually refers to local, regional and central governments.
Employment in agriculture (% of total employment)	Employment is defined as persons of working age who were engaged in any activity to produce goods or provide services for pay or profit, whether at work during the reference period or not at work due to temporary absence from a job, or to working-time arrangement. The agriculture sector consists of activities in agriculture, hunting, forestry and fishing, in accordance with division 1 (ISIC 2) or categories A-B (ISIC 3) or category A (ISIC 4).
Compensation of employees (% of expense)	Compensation of employees consists of all payments in cash, as well as in kind (such as food and housing), to employees in return for services rendered, and government contributions to social insurance schemes such as social security and pensions that provide benefits to employees.

Variables	Definitions
General government final consumption expenditure (% of GDP)	General government final consumption expenditure (formerly general government consumption) includes all government current expenditures for purchases of goods and services (including compensation of employees). It also includes most expenditures on national defense and security, but excludes government military expenditures that are part of government capital formation.

	(1)	(2)
	price	price
weight	2.044***	
	(5.42)	
length		57.20***
		(4.06)
_cons	-6.707	-4584.9
	(-0.01)	(-1.72)
N	74	74

-3

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$