

10. FROM FISCAL POLICY TO INCOME INEQUALITY IN ADVANCED ECONOMIES: DOES INSTITUTIONAL QUALITY HINDER?

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Abstract

Governments use fiscal policy to correct market failures and reallocate national income, so fiscal policy can narrow income inequality in society. Does institutional quality matter for the fiscal policy – income inequality relationship in advanced economies? For the answer, the paper investigates the impacts of fiscal policy, institutional quality and their interaction on income inequality for a balanced panel dataset of 30 advanced economies from 2002 to 2020. It applies the system-GMM Arellano-Bond estimators for estimation. Then, it uses the PMG estimator to test the robustness. The results show that fiscal policy and institutional quality narrow income inequality, but their interaction widens. It seems counter-intuitive. In addition, economic growth and unemployment increase income inequality. The findings suggest some implications for improving institutional quality and using fiscal policy to reduce income inequality in the advanced economies.

Keywords: fiscal policy, income inequality, institutional quality, advanced economies, system GMM estimator, PMG estimator.

JEL Classification: D63, E62, E64

Appendix

Table A. Data description

Variable	Definition	Type	Source
Income inequality (GIN)	Gini index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution.	value	World Bank
Government revenue (REV)	Revenue consists of taxes, social contributions, grants receivable, and other revenue.	%	IMF

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Appendix. From Fiscal Policy to Income Inequality in Advanced Economies

Variable	Definition	Type	Source
Public spending (SPE)	Total expenditure consists of total expense and the net acquisition of nonfinancial assets.	%	IMF
Economic growth (GDP)	GDP per capita is gross domestic product divided by midyear population.	In	World Bank
Education (EDU)	Gross primary school 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.	%	World Bank
Unemployment (UNE)	Unemployment refers to the share of the labor force that is without work but available for and seeking employment.	%	World Bank
Regulatory (GO1)	Regulatory Quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.		
Rule of Law (GO2)	Rule of Law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.		
Voice and Accountability (GO3)	Voice and Accountability captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.	level	World Bank
Control of Corruption (GO4)	Control of Corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.		

Appendix. From Fiscal Policy to Income Inequality in Advanced Economies

Variable	Definition	Type	Source
Government Effectiveness (GO5)	Government Effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.		
Political Stability (GO6)	Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism.		

Table B. Descriptive statistics for 30 advanced economies

Variable	Obs	Mean	Std. Dev.	Min	Max
Income inequality (GIN)	570	31.612	4.252	23.6	42.5
Government revenue (REV)	570	41.454	8.014	19.291	58.987
Public spending (SPE)	570	43.396	8.115	16.462	64.906
Economic growth (GDP)	570	40492.5	21573.03	8008.4	111968.4
Education (EDU)	570	102.189	4.177	95.648	126.575
Unemployment (UNE)	570	7.648	4.134	2.01	27.466
Regulatory Quality (GO1)	570	1.304	0.711	-0.189	2.469
Rule of Law (GO2)	570	1.374	0.474	0.197	2.353
Voice and Accountability (GO3)	570	0.774	0.545	-1.626	1.755
Control of Corruption (GO4)	570	1.333	0.363	0.148	2.047
Government Effectiveness (GO5)	570	1.360	0.489	0.083	2.100
Political Stability (GO6)	570	1.224	0.286	0.570	1.800

Table C. The matrix of correlation coefficients for 30 advanced economies

	GIN	REV	SPE	GDP	EDU	UNE
GIN	1					
REV	-0.463***	1				
SPE	-0.308***	0.848***	1			
GDP	-0.134***	0.366***	0.205***	1		
EDU	0.173***	-0.016	0.059	-0.001	1	
UNE	0.270***	0.006	0.226***	-0.418***	0.024	1

Note: ***, ** and * denote significance at 1 percent, 5 percent and 10 percent levels respectively

Table D. The matrix of correlation coefficients between six dimensions of governance

	GO1	GO2	GO3	GO4	GO5	GO6
GO1	1					
GO2	0.929***	1				
GO3	0.448***	0.414***	1			
GO4	0.847***	0.827***	0.409***	1		
GO5	0.944***	0.923***	0.496***	0.858***	1	
GO6	0.883***	0.807***	0.651***	0.777***	0.856***	1

Note: ***, ** and * denote significance at 1 percent, 5 percent and 10 percent levels respectively

Table E. Government revenue, institutional quality and income inequality: two-step S-GMM estimates (Pre-financial crisis period: 2002 - 2007)

Dependent variable: GINI index (income inequality)

Variables	IN1	IN2	IN3	IN4	IN5	IN6
Gini index (-1)	0.937*** (0.019)	0.925*** (0.022)	0.905*** (0.021)	0.946*** (0.020)	0.938*** (0.020)	0.917*** (0.022)
Government revenue	-0.121*** (0.018)	-0.140*** (0.031)	-0.101*** (0.010)	-0.152** (0.105)	-0.105*** (0.025)	-0.142*** (0.056)
Institutional quality	-0.727*** (0.139)	-1.185*** (0.326)	-1.437*** (0.152)	-1.246** (0.506)	-1.155*** (0.234)	-1.450*** (0.554)
Revenue*Inst. quality	0.113*** (0.010)	0.123*** (0.019)	0.103*** (0.009)	0.234** (0.073)	0.104*** (0.016)	0.129*** (0.042)
Economic growth	0.001*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.012** (0.002)	0.002*** (0.000)	0.003*** (0.000)
Education	0.003 (0.010)	0.002 (0.011)	0.005 (0.012)	0.011 (0.024)	0.001 (0.010)	0.006 (0.012)
Unemployment	0.115*** (0.011)	0.123*** (0.015)	0.020* (0.010)	0.120** (0.017)	0.119*** (0.011)	0.114*** (0.008)
Instrument	22	23	23	24	23	22
Country/Observation	30/540	30/540	30/540	30/540	30/540	30/540
AR(2) test	0.279	0.103	0.192	0.136	0.199	0.155
Sargan test	0.120	0.780	0.256	0.100	0.116	0.102
Hansen test	0.115	0.425	0.114	0.120	0.121	0.114

Note: ***, **, * note significance level at 1%, 5%, 10% respectively

Table F. Public spending, institutional quality and income inequality: two-step S-GMM estimates (Pre-financial crisis period: 2002 - 2007)

Dependent variable: GINI index (income inequality)

Variables	IN1	IN2	IN3	IN4	IN5	IN6
Gini index (-1)	0.938*** (0.015)	0.935*** (0.019)	0.906*** (0.021)	0.938*** (0.020)	0.942*** (0.019)	0.902*** (0.021)
Public spending	-0.114*** (0.011)	-0.106*** (0.017)	-0.104*** (0.010)	-0.145*** (0.047)	-0.119*** (0.023)	-0.161*** (0.062)
Institutional quality	-0.285** (0.105)	-0.384*** (0.228)	-0.472*** (0.175)	-0.582** (0.361)	-0.347* (0.223)	-2.713*** (0.716)
Spending*Inst. quality	0.109*** (0.007)	0.105*** (0.010)	0.106*** (0.010)	0.129*** (0.033)	0.114*** (0.015)	0.148** (0.046)
Economic growth	0.011*** (0.001)	0.011*** (0.001)	0.003*** (0.001)	0.003*** (0.001)	0.011*** (0.001)	0.004*** (0.001)
Education	0.004 (0.012)	0.003 (0.012)	0.014 (0.016)	0.002 (0.014)	0.005 (0.014)	0.000 (0.016)
Unemployment	0.113*** (0.010)	0.117*** (0.012)	0.114*** (0.012)	0.031** (0.013)	0.031*** (0.010)	0.032** (0.015)
Instrument	23	24	22	23	22	24
Country/Observation	30/540	30/540	30/540	30/510	30/540	30/540
AR(2) test	0.245	0.194	0.191	0.159	0.239	0.323
Sargan test	0.145	0.123	0.226	0.101	0.114	0.157
Hansen test	0.162	0.105	0.136	0.130	0.134	0.262

Note: ***, **, * note significance level at 1%, 5%, 10% respectively

Table G. Government revenue, institutional quality and income inequality: two-step S-GMM estimates (Post-financial crisis period: 2011 - 2020)

Dependent variable: GINI index (income inequality)

Variables	IN1	IN2	IN3	IN4	IN5	IN6
Gini index (-1)	0.926*** (0.021)	0.925*** (0.020)	0.897*** (0.023)	0.953*** (0.019)	0.932*** (0.020)	0.926*** (0.019)
Government revenue	-0.016** (0.008)	-0.029** (0.014)	-0.011* (0.005)	-0.089** (0.037)	-0.028** (0.03)	-0.095*** (0.037)
Institutional quality	-0.385** (0.157)	-0.597** (0.243)	-0.679*** (0.203)	-1.890*** (0.659)	-0.531* (0.275)	-2.239*** (0.793)
Revenue*Inst. quality	0.008* (0.004)	0.016* (0.009)	0.009* (0.004)	0.058** (0.024)	0.017* (0.008)	0.069*** (0.027)
Economic growth	0.001*** (0.000)	0.003*** (0.000)	0.003*** (0.000)	0.004*** (0.001)	0.003*** (0.000)	0.005*** (0.001)
Education	0.002 (0.008)	0.001 (0.008)	0.001 (0.011)	0.009 (0.018)	0.007 (0.007)	0.004 (0.012)
Unemployment	0.021* (0.012)	0.024** (0.012)	0.023*** (0.009)	0.033* (0.023)	0.033*** (0.011)	0.052* (0.022)
Instrument	22	23	23	24	23	22
Country/Observation	30/540	30/540	30/540	30/540	30/540	30/540
AR(2) test	0.191	0.168	0.226	0.175	0.170	0.261
Sargan test	0.686	0.721	0.183	0.114	0.136	0.362
Hansen test	0.547	0.445	0.280	0.139	0.160	0.134

Note: ***, **, * note significance level at 1%, 5%, 10% respectively

Table H. Public spending, institutional quality and income inequality: two-step S-GMM estimates (Post-financial crisis period: 2011 - 2020)

Dependent variable: GINI index (income inequality)

Variables	IN1	IN2	IN3	IN4	IN5	IN6
Gini index (-1)	0.925*** (0.018)	0.931*** (0.019)	0.902*** (0.022)	0.935*** (0.019)	0.932*** (0.020)	0.937*** (0.021)
Public spending	-0.011** (0.005)	-0.020** (0.010)	-0.005 (0.004)	-0.033* (0.019)	-0.026** (0.013)	-0.061 (0.041)
Institutional quality	-0.243** (0.102)	-0.374*** (0.136)	-0.525** (0.128)	-0.638** (0.211)	-0.502* (0.257)	-1.780*** (0.700)
Spending*Inst. quality	0.005* (0.003)	0.012* (0.006)	0.004*** (0.001)	0.022* (0.013)	0.015* (0.008)	0.043 (0.031)
Economic growth	0.002*** (0.000)	0.001* (0.000)	0.001 (0.001)	0.001 (0.001)	0.002** (0.001)	0.004*** (0.001)
Education	0.001 (0.011)	0.007 (0.011)	0.012 (0.015)	0.006 (0.016)	0.002 (0.012)	0.010 (0.017)
Unemployment	0.030*** (0.010)	0.032*** (0.011)	0.020** (0.009)	0.038*** (0.014)	0.034*** (0.011)	0.024 (0.024)
Instrument	23	24	22	23	22	24
Country/Observation	30/540	30/540	30/540	30/510	30/540	30/540
AR(2) test	0.179	0.160	0.214	0.138	0.165	0.243
Sargan test	0.155	0.172	0.197	0.115	0.166	0.192
Hansen test	0.162	0.172	0.156	0.189	0.140	0.170

Note: ***, **, * note significance level at 1%, 5%, 10% respectively

Table I. Government revenue, institutional quality and income inequality: one-step S-GMM estimates (Pre-financial crisis period: 2002 - 2007)

Dependent variable: GINI index (income inequality)

Variables	IN1	IN2	IN3	IN4	IN5	IN6
Gini index (-1)	0.932*** (0.010)	0.927*** (0.011)	0.896*** (0.012)	0.934*** (0.013)	0.931*** (0.010)	0.917*** (0.010)
Government revenue	-0.129*** (0.023)	-0.129*** (0.040)	-0.108** (0.012)	-0.133* (0.023)	-0.119*** (0.030)	-0.004 (0.085)
Institutional quality	-0.249** (0.143)	-0.413*** (0.008)	-0.432*** (0.155)	-0.261** (0.113)	-0.263** (0.040)	-0.617 (0.722)
Revenue*Inst. quality	0.117** (0.113)	0.113** (0.024)	0.105** (0.011)	0.122* (0.091)	0.113** (0.019)	0.101*** (0.003)
Economic growth	0.003*** (0.000)	0.002* (0.001)	0.002*** (0.000)	0.000 (0.001)	0.001* (0.000)	0.002*** (0.000)
Education	0.011 (0.009)	0.003 (0.010)	0.008 (0.007)	0.007 (0.022)	0.009 (0.009)	0.002 (0.012)
Unemployment	0.019* (0.012)	0.028** (0.016)	0.026* (0.011)	0.023 (0.021)	0.111*** (0.012)	0.016 (0.012)
Instrument	22	23	23	24	23	22
Country/Observation	30/540	30/510	30/510	30/540	30/540	30/540
AR(2) test	0.250	0.343	0.288	0.166	0.187	0.162
Sargan test	0.120	0.102	0.111	0.100	0.116	0.102

Note: ***, **, * note significance level at 1%, 5%, 10% respectively

Table J. Public spending, institutional quality and income inequality: one-step S-GMM estimates (Pre-financial crisis period: 2002 - 2007)

Dependent variable: GINI index (income inequality)

Variables	IN1	IN2	IN3	IN4	IN5	IN6
Gini index (-1)	0.931*** (0.010)	0.931*** (0.010)	0.896*** (0.013)	0.929*** (0.011)	0.932*** (0.010)	0.904*** (0.013)
Public spending	-0.119** (0.017)	-0.113** (0.026)	-0.004 (0.011)	-0.154** (0.062)	-0.122*** (0.029)	-0.139** (0.072)
Institutional quality	-0.421** (0.147)	-0.488* (0.310)	-0.490*** (0.157)	-0.697** (0.354)	-0.296** (0.071)	-2.130*** (0.774)
Spending*Inst. quality	0.112** (0.010)	0.109** (0.016)	0.000** (0.010)	0.136** (0.043)	0.115** (0.019)	0.184** (0.054)
Economic growth	0.003** (0.001)	0.011** (0.001)	0.002*** (0.000)	0.001 (0.001)	0.003** (0.001)	0.005*** (0.001)
Education	0.007 (0.010)	0.006 (0.010)	0.006 (0.008)	0.004 (0.013)	0.008 (0.010)	0.004 (0.011)
Unemployment	0.011 (0.011)	0.018* (0.013)	0.026** (0.011)	0.025* (0.014)	0.011 (0.012)	0.013 (0.011)
Instrument	23	24	22	23	22	24
Country/Observation	30/540	30/540	30/510	30/510	30/540	30/540
AR(2) test	0.220	0.187	0.280	0.197	0.197	0.373
Sargan test	0.145	0.123	0.108	0.101	0.114	0.157

Note: ***, **, * note significance level at 1%, 5%, 10% respectively

Table K. Government revenue, institutional quality and income inequality: one-step S-GMM estimates (Post-financial crisis period: 2011 - 2020)

Dependent variable: GINI index (income inequality)

Variables	IN1	IN2	IN3	IN4	IN5	IN6
Gini index (-1)	0.926*** (0.011)	0.925*** (0.011)	0.897*** (0.013)	0.929*** (0.011)	0.926*** (0.010)	0.907*** (0.012)
Government revenue	-0.114*** (0.018)	-0.107** (0.032)	-0.000 (0.014)	-0.146*** (0.049)	-0.132*** (0.026)	-0.158*** (0.046)
Institutional quality	-1.312** (0.302)	-1.098** (0.462)	-0.461* (0.207)	-2.968*** (1.048)	-0.699** (0.394)	-3.680*** (0.939)
Revenue*Inst. quality	0.108** (0.010)	0.104** (0.020)	0.100** (0.013)	0.100*** (0.033)	0.119** (0.016)	0.117*** (0.034)
Economic growth	0.002* (0.001)	0.001** (0.000)	0.002*** (0.000)	0.004*** (0.001)	0.003** (0.001)	0.007* (0.001)
Education	0.000 (0.009)	0.002 (0.011)	0.009 (0.007)	0.010 (0.009)	0.001 (0.009)	0.002 (0.007)
Unemployment	0.034** (0.015)	0.012 (0.016)	0.033** (0.014)	0.067*** (0.020)	0.027* (0.014)	0.061*** (0.017)
Instrument	22	23	23	24	23	22
Country/Observation	30/540	30/510	30/510	30/540	30/540	30/540
AR(2) test	0.164	0.279	0.290	0.129	0.144	0.239
Sargan test	0.114	0.106	0.147	0.114	0.135	0.362

Note: ***, **, * note significance level at 1%, 5%, 10% respectively

Table L. Public spending, institutional quality and income inequality: one-step S-GMM estimates (Post-financial crisis period: 2011 - 2020)

Dependent variable: GINI index (income inequality)

Variables	IN1	IN2	IN3	IN4	IN5	IN6
Gini index (-1)	0.928*** (0.011)	0.929*** (0.010)	0.896*** (0.013)	0.929*** (0.010)	0.928*** (0.011)	0.919*** (0.015)
Public spending	-0.113*** (0.013)	-0.128** (0.019)	-0.002** (0.012)	-0.162** (0.041)	-0.038* (0.021)	-0.145** (0.066)
Institutional quality	-1.307** (0.240)	-0.540* (0.321)	-0.458* (0.260)	-1.398*** (0.666)	-0.820** (0.428)	-3.288*** (1.111)
Spending*Inst. quality	0.018** (0.008)	0.118** (0.012)	0.001 (0.011)	0.143** (0.028)	0.025* (0.014)	0.110** (0.050)
Economic growth	0.002* (0.001)	0.002* (0.001)	0.002*** (0.000)	0.002 (0.001)	0.002** (0.001)	0.005*** (0.001)
Education	0.001 (0.010)	0.005 (0.010)	0.006 (0.008)	0.010 (0.009)	0.001 (0.010)	0.007 (0.013)
Unemployment	0.024* (0.014)	0.028** (0.014)	0.013 (0.013)	0.042** (0.019)	0.031** (0.014)	0.058*** (0.021)
Instrument	23	24	22	23	22	24
Country/Observation	30/540	30/540	30/510	30/510	30/540	30/540
AR(2) test	0.165	0.131	0.288	0.132	0.137	0.237
Sargan test	0.155	0.172	0.136	0.115	0.166	0.192

Note: ***, **, * note significance level at 1%, 5%, 10% respectively