Online Appendix to the paper

'The future of income inequality in the European Union: Do economic growth and poverty matter?'

Teodora Mădălina POP [a, b, *]

[a] Department of Political Economy, Faculty of Economics and Business Administration, Babeș-Bolyai University, Cluj-Napoca, Romania

[b] LEO-UCA Laboratory, Clermont-Auvergne University, Clermont-Ferrand, France

* Corresponding author: teodora.pop@econ.ubbcluj.ro

- Portuguese Economic Journal –

This document contains supplementary material for the article '**The future of income inequality in the European Union: Do economic growth and poverty matter?'**, accepted for publication in Portuguese Economic Journal (PEJ). It includes four sections:

- Section A (Descriptives): Tables 1-2;
- Section B (Preliminary data tests): Tables 3-6;
- Section C (Model identification and estimation): Tables 7-9;
- Section D (Robustness checks): Figure 1 and Table 10.

These materials are referenced in the main article and are provided here to ensure transparency and reproducibility.

Section A. Descriptives

Table 1 Variables description and source

Variable	Description	Source
Real GDP per capita (GDP)	The real GDP per capita expressed in PPP (in mil. 2017 USD)	Penn World Table (PWT) version 10.0.: https://www.rug.nl/ggdc/productivity/pwt/
GINI coefficient (GINI)	The calculated net GINI coefficient after tax collection	World Inequality Database (WID): https://wid.world/data/
Theil index (THEIL)	Represents an entropy index that measures income inequality	Poverty and Inequality Platform (PIP): https://pip.worldbank.org/home
Top 1% (TOP 1%)	Reflects the richest 1% of the population	World Inequality Database (WID): https://wid.world/data/
Absolute poverty at 1.90$/day (POV)	The Headcount ratio measured at 1.90 USD/day (2011 PPP)	Poverty and Inequality Platform (PIP): https://pip.worldbank.org/home
Absolute poverty at 3.25$/day (POV3.25$)	The Headcount ratio measured at 3.25 USD/day (2011 PPP)	Poverty and Inequality Platform (PIP): https://pip.worldbank.org/home
Absolute poverty at 5.5$/day (POV5.5$)	The Headcount ratio measured at 5.5 USD/day (2011 PPP)	Poverty and Inequality Platform (PIP): https://pip.worldbank.org/home
Relative poverty 50% (POV50%)	The share of the population living below the poverty line of 50% of the median income	World Development Indicators (WDI): https://databank.worldbank.org/
Tertiary education (EDU)	The share of the population aged 24-65 with completed tertiary education	World Development Indicators (WDI): https://databank.worldbank.org/
Unemployment rate (UNEMP)	The unemployment rate as % of the total labour force	World Development Indicators (WDI): https://databank.worldbank.org/
Money supply (MS)	The money supply in million EUR (current prices)	Euromonitor Passport Portal: https://www.portal.euromonitor.com/
Inflation (INFL)	Inflation as measured by the consumer price index (annual %)	World Development Indicators (WDI): https://databank.worldbank.org/
Relative redistribution (RED)	Reflects the difference between themarket-income and net-income GINI indices divided by the market income GINI and multiplied by 100. It is positive if redistribution lowers inequality, and negative otherwise	Standardized World Income Inequality Database of Frederick Solt (SWIID): https://fsolt.org/swiid/

Table 2 Full descriptive statistics

Variable/ Statistic	Mean	Std. Dev	Min	Max	Observations
			Full sample		
GDP	36075.16	17073.48	8204.01	112941.50	520
GINI	32.55	5.37	24.53	51.61	520
POV	0.67	1.13	0.00	8.80	520
EDU	22.53	8.25	7.28	44.60	520
UNEMP	8.76	4.42	1.81	27.47	520
			Robustness analysis		
THEIL	18.89	4.68	8.80	36.68	520
TOP 1%	0.09	0.02	0.03	0.18	520
POV3.25$	0.01	0.03	0.00	0.26	520
POV5.5$	0.04	0.08	0.00	0.65	520
POV50%	0.13	0.44	0.01	10.00	520
			West sample		
GDP	45298.19	16271.84	25208.71	112941.50	300
GINI	31.97	5.11	25.82	49.31	300
POV	0.35	0.37	0.00	1.90	300
EDU	25.62	7.87	7.28	44.60	300
UNEMP	8.16	4.47	1.81	27.47	300
			East sample		
GDP	23498.31	7341.97	8204.02	40731.74	220
GINI	33.33	5.63	24.53	51.61	220
POV	1.11	1.59	0.00	8.80	220
EDU	18.32	6.78	7.50	37.90	220
UNEMP	9.58	4.22	2.01	19.92	220
			Eurozone sample		
GDP	39582.78	18106.59	1110.81	112941.50	340
GINI	32.80	4.57	27.80	49.31	340
POV	0.48	0.63	0.00	5.80	340
MS	281203.40	430145.90	1330.00	2585164.00	320
RED	38.34	5.97	25.50	48.20	340
INFL	2.21	2.08	-4.48	15.40	340
			Non-Eurozone sample		
GDP	29449.66	12521.52	8204.02	55898.20	180
GINI	32.11	6.66	24.53	51.61	180
POV	1.04	1.66	0.00	8.80	180
MS	213971.30	441909.30	2316.00	2065912.00	180
RED	38.50	8.62	20.40	50.00	180
INFL	3.33	4.97	-1.54	45.67	180

Section B. Preliminary data tests

Table 3 Cross-sectional dependence tests

Test/Variable	GDP	GINI	POV	EDU	UNEMP
Breusch-Pagan LM	5331.740*** (0.000)	2510.411*** (0.000)	531.084*** (0.000)	4969.302*** (0.000)	1620.776*** (0.000)
Pesaran scaled LM	196.381*** (0.000)	85.719*** (0.000)	8.083*** (0.000)	182.165*** (0.000)	50.825*** (0.000)
Bias-corrected scaled LM	195.696*** (0.000)	85.035*** (0.000)	7.399*** (0.000)	181.480*** (0.000)	50.140*** (0.000)
Pesaran CD	70.536*** (0.000)	11.917*** (0.000)	-0.090 (0.928)	57.946*** (0.000)	24.686*** (0.000)

Notes: H0 is 'No cross-section dependence'. P-values in brackets. ***, **, *, denotes significance at the 1%, 5% and 10% level.

Table 4 Hadri and Larsson (2005) unit root test

Test / Variable	**Hadri and Larsson (2005)**		
	Level statistic	**Difference statistic**	**Level statistic**
	intercept	*intercept*	*intercept and trend*
GDP	50.973***	0.305	18.139***
GINI	34.246***	0.688	14.344***
POV	9.891***	-3.394	5.939***
EDU	52.684***	0.276	17.328***
UNEMP	21.242***	4.589***	20.042***

Notes: H0 is 'All panels are stationary'. The unit root test is conducted to control for cross-sectional dependence. ***, **, * denote statistical significance at the 1%, 5%, and 10% level.

Table 5 Pesaran (2007) CIPS test

Test / Variable	**Pesaran (2007) CIPS**		
	Level statistic	**Difference statistic**	**Level statistic**
	intercept	*intercept*	*intercept and trend*
GDP	-1.992	-3.323***	-2.314
GINI	-2.329	-4.002***	-3.032***
POV	-3.070***	-5.299***	-3.443***
EDU	-1.757	-4.229***	-2.004
UNEMP	-1.053	-3.236***	-1.939

Notes: H0 is 'All series are non-stationary'. ***, **, * denote statistical significance at the 1%, 5%, and 10% level.

Table 6 Westerlund (2007) cointegration test

Statistic	**Value**	**Z-value**	**P-value**	**Robust p-value**
Gt	-0.523	2.223	0.987	0.716
Ga	-0.686	3.494	1.000	0.920
Pt	-2.469	0.115	0.546	0.457
Pa	-0.390	1.120	0.869	0.647

Notes: H0 is 'No cointegration'. The equation includes the constant term and one lag. The width of the Bartlett kernel window is set to three. Robust p-values using 700 replications are reported in the last column. ***, **, *, denotes significance at the 1%, 5% and 10% level.

Section C. Model identification and estimation

Table 7 Juodis et al. (2021) Granger non-causality Test

Hypotheses	Lags	HPJ Wald test	P-value
GDP			
H0: GINI does not Granger-cause GDP. H1: GINI does Granger-cause GDP for at least one panelvar.	1	0.470	0.493
H0: POV does not Granger-cause GDP. H1: POV does Granger-cause GDP for at least one panelvar.	1	0.221	0.638
H0: Selected covariates do not Granger-cause GDP. H1: H0 is violated.	1	0.833	0.659
GINI			
H0: GDP does not Granger-cause GINI. H1: GDP does Granger-cause GINI for at least one panelvar.	1	8.349***	0.004
H0: POV does not Granger-cause GINI. H1: POV does Granger-cause GINI for at least one panelvar.	1	1.178	0.278
H0: Selected covariates do not Granger-cause GINI. H1: H0 is violated.	1	11.214***	0.003
POV			
H0: GDP does not Granger-cause POV. H1: GDP does Granger-cause POV for at least one panelvar.	1	2.959*	0.085
H0: GINI does not Granger-cause POV. H1: GINI does Granger-cause POV for at least one panelvar.	1	0.672	0.413
H0: Selected covariates do not Granger-cause POV. H1: H0 is violated.	2	2.860	0.582

Notes: The lag length is chosen based on the BIC criterion. Options for cross-sectional dependence and cross-sectional heteroscedasticity included. ***, **, *, denotes significance at the 1%, 5%, and 10% level.

Table 8 PVAR order selection criteria

Lag	CD	J	J p-value	MBIC	MAIC	MQIC
1	0.864	21.492	0.255	-85.899	-14.508	-42.808
2	0.874	9.150	0.424	-44.546	-8.850	-23.000
3	0.866	-	-	-	-	-
Number of observations 390 Number of panels 26						

Notes: MMSCs are computed using the first three lags of the variables as instruments.

Table 9 Panel VAR stability condition

Real	Imaginary	Modulus
0.813	0	0.813
0.337	0	0.337
-0.095	0	0.095

Notes: All the eigenvalues lie inside the unit circle. The SVAR model satisfies the stability condition.

Section D. Robustness checks

Figure 1 Inequality response after different poverty shocks

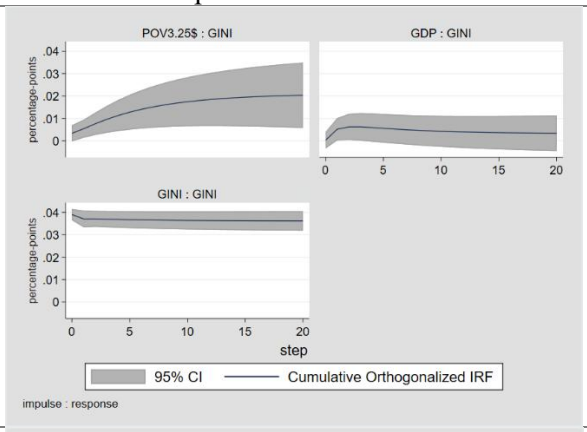
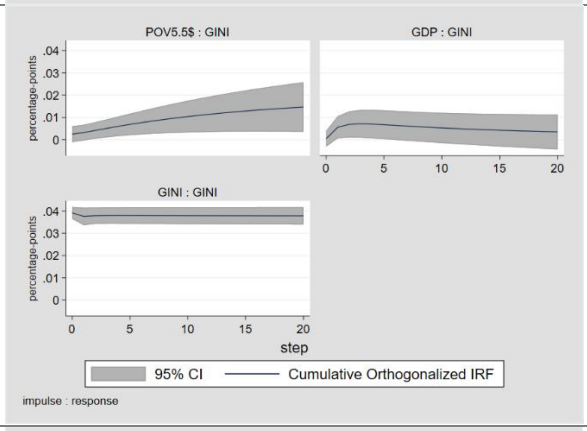
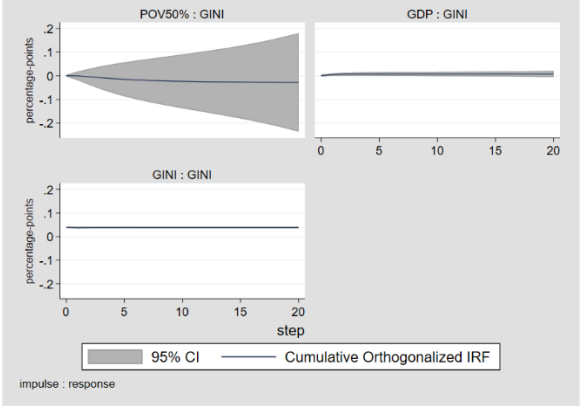
Poverty line	IRFs – GINI response
$3.25	
$5.50	
50%	

Table 10 FEVD analysis – with additional factors

Response Variable	**Impulse variable**				
	GDP	POV	GINI	EDU	UNEMP
GDP	92.708	4.999	0.183	1.160	0.950
POV	0.197	98.367	0.103	0.017	1.316
GINI	1.320	3.758	95.910	0.154	0.046
EDU	1.352	0.168	0.080	98.396	0.003
UNEMP	22.470	0.819	0.218	2.276	74.218

Notes: Twenty years horizon forecast-error variance decomposition. The variations are expressed in percentages.