

Supplementary Materials

“Inequality and Concentration in Farmland Production and Size: A Regional Analysis for the European Union from 2010 to 2020”

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Table S1: Gini index by Country and Year

Country	Gini index for farmland				Gini index for production			
	2010	2013	2016	2020	2010	2013	2016	2020
AT	36.06	40.25	44.30	39.76	65.96	63.87	63.65	63.83
BE	35.22	31.67	34.34	34.01	57.81	58.68	56.16	59.03
BG	92.68	92.63	91.42	85.14	82.42	86.37	87.92	86.03
CY	61.64	62.45	66.96	65.52	85.46	85.74	87.88	89.37
CZ	78.54	79.69	79.00	78.50	84.20	84.64	85.79	86.15
DE	54.78	54.82	55.20	54.98	65.76	66.72	67.79	70.43
DK	53.82	55.73	57.44	62.95	73.11	72.90	74.27	78.98
EE	74.44	73.91	77.92	73.48	89.15	90.38	88.68	85.88
EL	66.18	66.74	54.68	55.20	66.19	66.93	66.28	69.36
ES	57.45	58.60	63.28	63.22	79.77	80.38	80.18	80.47
FI	35.83	36.28	39.23	42.29	67.00	66.58	67.76	71.21
FR	40.26	39.76	42.88	34.83	61.71	59.86	60.82	59.33
HR	64.42	70.32	66.24	67.30	71.40	70.88	70.62	74.99
HU	89.14	89.53	88.25	80.78	86.75	88.59	88.88	86.28
IE	37.89	38.03	38.20	36.10	69.40	68.50	69.28	70.57
IT	65.58	58.10	61.53	62.22	82.67	77.94	79.54	82.24
LT	65.53	68.29	70.46	/	77.92	79.67	81.51	/
LU	43.64	44.89	44.07	44.64	50.80	51.16	51.77	55.97
LV	60.48	66.88	67.31	75.13	84.44	85.79	86.06	87.79
MT	41.86	40.17	37.11	29.83	85.81	84.53	83.57	86.13
NL	33.83	35.62	31.66	33.25	63.40	62.94	56.23	57.31
PL	56.92	57.72	57.66	58.14	72.60	73.06	75.07	76.79
PT	73.94	73.71	72.76	72.94	82.03	83.14	82.98	84.96
RO	68.71	71.17	67.78	75.98	67.54	71.10	70.02	77.19
SE	57.25	58.66	60.76	62.86	76.83	79.10	79.25	80.57
SI	48.11	49.04	48.16	50.66	66.62	65.99	66.68	71.06
SK	89.22	88.10	87.68	84.88	91.51	90.89	90.46	88.59

Note: Gini index is reported in a 0-100 scale. The yearly average Gini index by country is computed according to the following two-steps procedure. First, the annual number of farm holdings, the hectares, and the standard output of all the regions (NUTS-2) belonging to a given country (NUTS-0) are summed across the available dimensions excluding the economic size (i.e., organic farming, utilized agricultural area, and farm type of agricultural holding). Then, the national Gini Index is computed by aggregating the economic size classes as described in Section 3. The minimum and maximum values represent the lowest and highest concentration values recorded among the regions belonging to a given country. Regarding Lithuania (LT), the last available information from Eurostat regards 2016. Thus, Gini index and the corresponding descriptive statistics for 2020 are not available (NA).

Table S2: Variability of the Gini index by Country and Year

Country	Gini index for farmland				Gini index for production			
	2010	2013	2016	2020	2010	2013	2016	2020
AT	9.72	11.23	8.14	5.38	6.00	6.23	6.12	5.39
BE	5.82	7.45	5.95	5.62	5.79	7.45	5.66	7.63
BG	2.74	1.92	3.74	4.66	7.04	6.55	5.02	4.17
CY	/	/	/	/	/	/	/	/
CZ	3.64	7.87	3.08	4.55	2.67	8.34	3.68	2.76
DE	15.11	14.33	13.71	12.56	9.53	8.77	9.04	7.50
DK	2.48	3.08	2.94	2.25	1.51	2.05	2.29	2.57
EE	/	/	/	/	/	/	/	/
EL	8.00	9.47	7.71	6.85	6.62	4.35	4.98	7.97
ES	12.49	11.96	10.16	12.64	4.78	4.75	4.22	4.96
FI	2.22	0.91	3.00	4.01	3.14	4.14	3.74	4.96
FR	8.15	8.17	8.04	5.64	6.75	7.04	7.86	7.84
HR	14.52	9.31	5.81	3.66	13.61	6.21	7.67	8.12
HU	2.75	2.73	2.81	3.02	2.56	2.05	1.96	1.81
IE	2.83	2.62	2.37	3.24	2.76	3.02	2.68	3.02
IT	7.49	7.53	7.22	7.10	9.08	10.78	11.24	8.08
LT	/	/	/	/	/	/	/	/
LU	/	/	/	/	/	/	/	/
LV	/	/	/	/	/	/	/	/
MT	/	/	/	/	/	/	/	/
NL	5.07	4.54	3.84	4.04	5.57	5.53	5.35	7.28
PL	12.20	11.36	11.03	10.62	8.02	7.12	6.69	5.68
PT	16.33	15.17	15.40	14.31	6.16	5.02	6.05	4.68
RO	9.83	10.35	10.38	8.74	8.66	7.63	7.50	5.98
SE	1.78	1.60	1.30	1.48	3.31	2.46	2.28	1.87
SI	1.65	1.60	2.36	3.28	0.62	0.61	0.32	0.54
SK	1.70	1.67	0.73	2.16	1.33	1.62	0.92	1.59

Note: The variability of the Gini index by country (NUTS-0) and year is computed as the root mean squared error of the available regional (NUTS-2) Gini indices from the national average reported in Table A1 (which acts as the barycenter). For Cyprus (CY), Estonia (EE), Lithuania (LT), Luxembourg (LU), Latvia (LV), and Malta (MT) the only available information from Eurostat is at the national (NUTS-0) level. Thus, no infra-country variability can be computed as, for each year, only a single numeric value is provided.

Table S3: Moran's I statistics and p-values for the Gini index on production and farmland from 2010 to 2020

Gini index	Statistics	2010	2013	2016	2020
Production	Moran's I estimate	0.6457	0.6731	0.6895	0.7218
	P-value parametric	0.0000	0.0000	0.0000	0.0000
	P-value Monte Carlo	0.001	0.001	0.001	0.001
Farmland	Moran's I estimate	0.698	0.6908	0.7216	0.7486
	P-value parametric	0.0000	0.0000	0.0000	0.0000
	P-value Monte Carlo	0.001	0.001	0.001	0.001

Note: Moran's I estimate refers to the 1-lag Moran's statistics for spatial autocorrelation of the observations under the null hypothesis that Gini indices are randomly distributed across European regions following a completely random (non-spatial) process. Parametric p-values for Moran's I statistics are computed assuming a Gaussian distribution, while Monte Carlo p-values are computed using the empirical distribution of the test statistics from N=1000 independent replications.