The Economic Cost of Nationalism

Growth Effects and Carbon-Footprint Trade-offs

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Research question and headline findings

Question

What are the economic and environmental costs of rising nationalist sentiment?

- Global panel: 193 countries, 1979–2013.
- Nationalism is measured using GDELT event data and network-based country-year indicators.
- Main economic result: nationalism is associated with lower GDP per capita, with long-run losses around 8–12% in baseline and robustness estimates.
- Environmental result: nationalism is associated with lower aggregate CO_2 emissions and emissions intensity, partly because it slows economic activity.

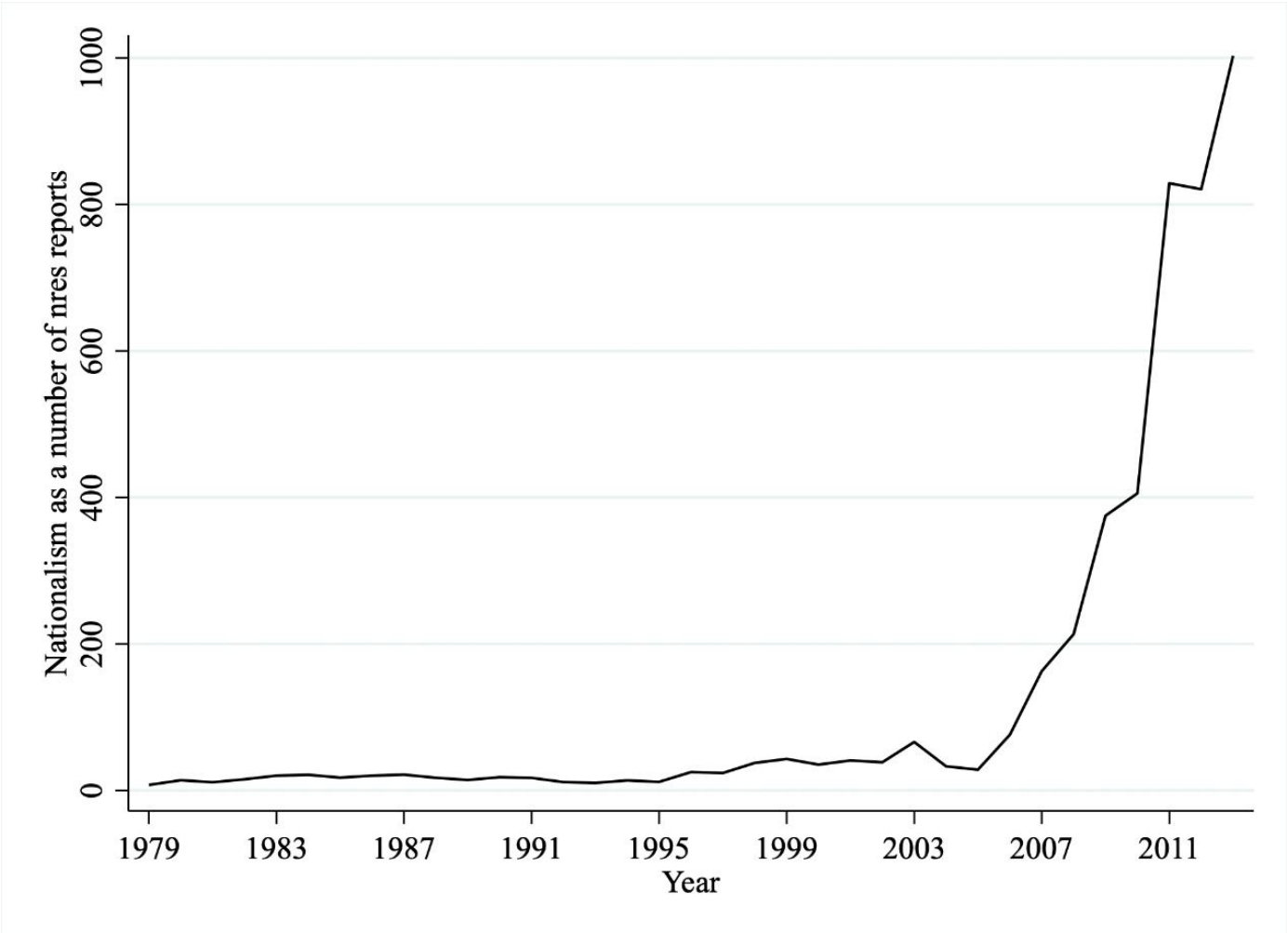
Why study nationalism as a growth determinant?

- Nationalism has re-emerged as an organizing force in global politics and economic policy.
- It can reshape trade openness, innovation diffusion, foreign investment, migration, and multilateral cooperation.
- The literature often studies nationalism through immigration, populism, or single events; this paper constructs a global, longitudinal measure.
- The analysis asks whether nationalism has macroeconomic effects beyond standard institutional and policy variables.

From GDELT events to a nationalism measure

- Source: GDELT MASTERREDUCEDV2, which records global news events in structured source-target-event form.
- Focus: verbal conflict events that capture politically salient and confrontational rhetoric.
- Filters: target actors are national or government actors; source actors are political entities and government officials.
- Seven CAMEO codes identify escalatory claims, threats, rejected resolutions, and mobilization against foreign targets.
- Country-year aggregation yields a high-frequency, cross-national panel of nationalist political rhetoric.

Nationalistic rhetoric accelerates after the mid-2000s

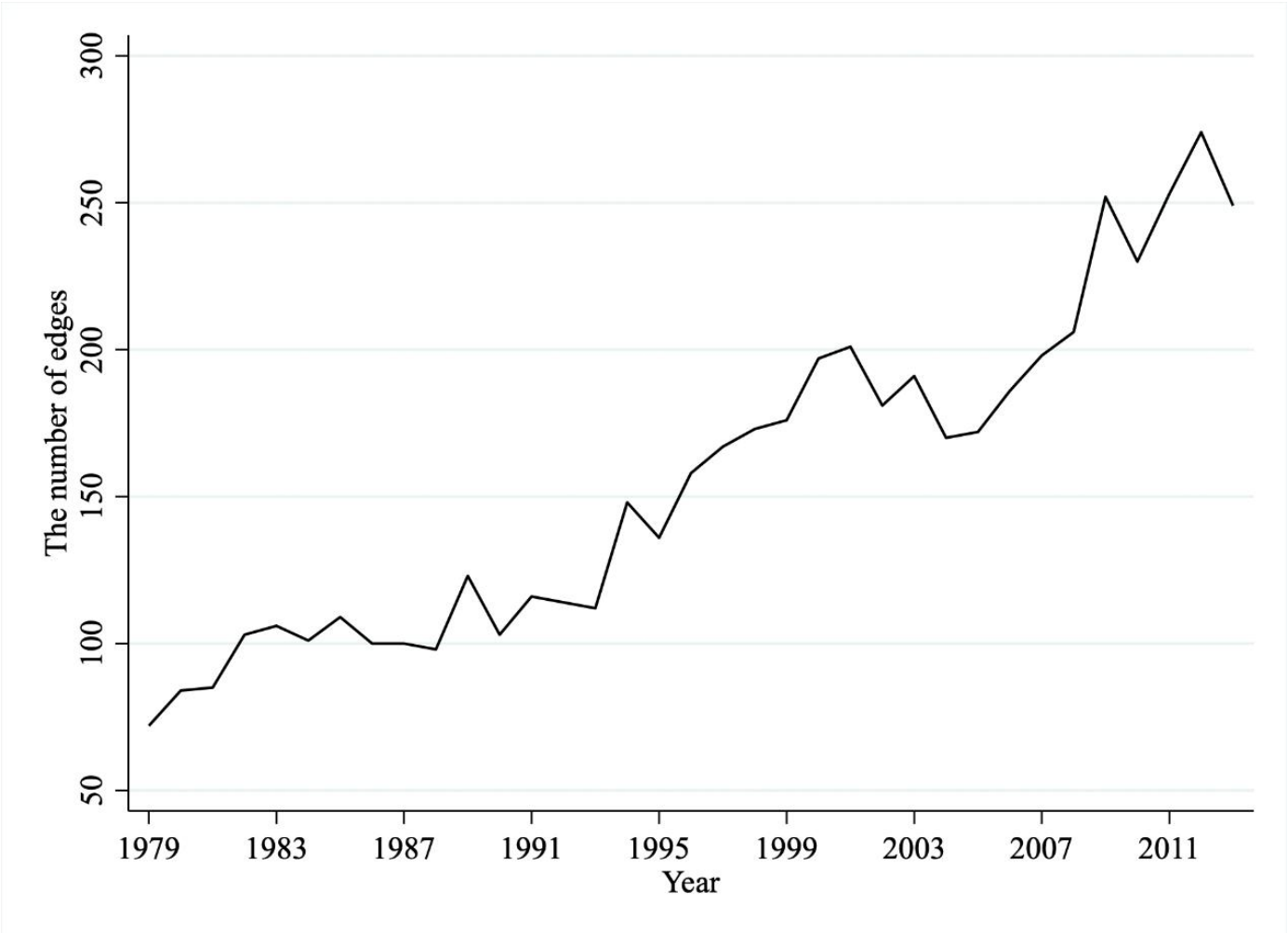


Source: Figure 1, frequency of nationalism as news reports, 1979–2013.

Network operationalization

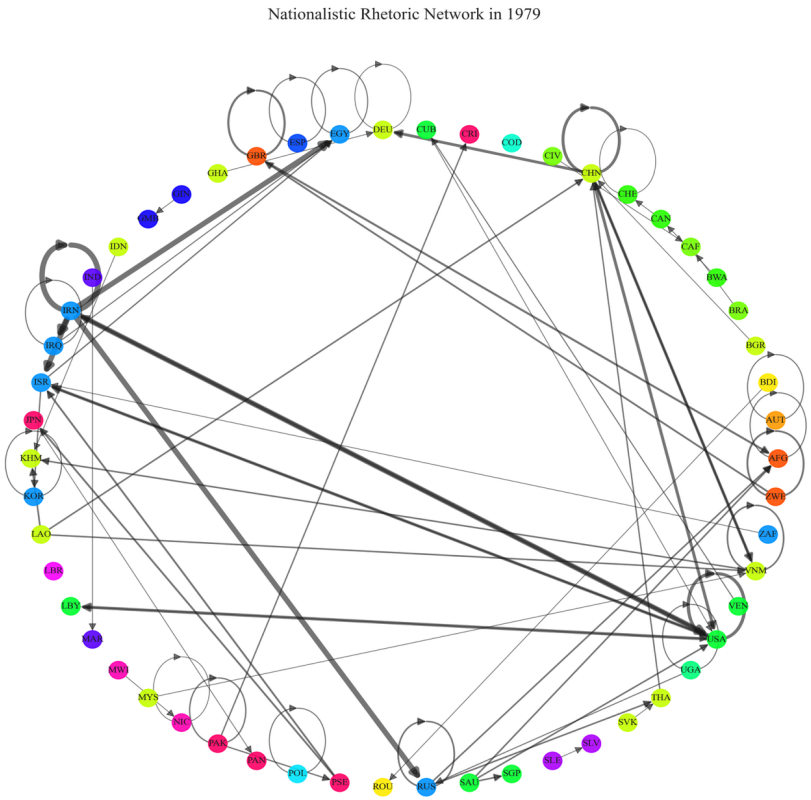
- Countries are nodes; cross-country rhetorical or negotiation ties form edges.
- The paper uses degree, closeness, betweenness, and eigenvector centrality to characterize country positions.
- A binary nationalism treatment captures countries detached from the negotiation network in a given year.
- A PCA-based continuous index summarizes network centrality information as a complementary proxy.

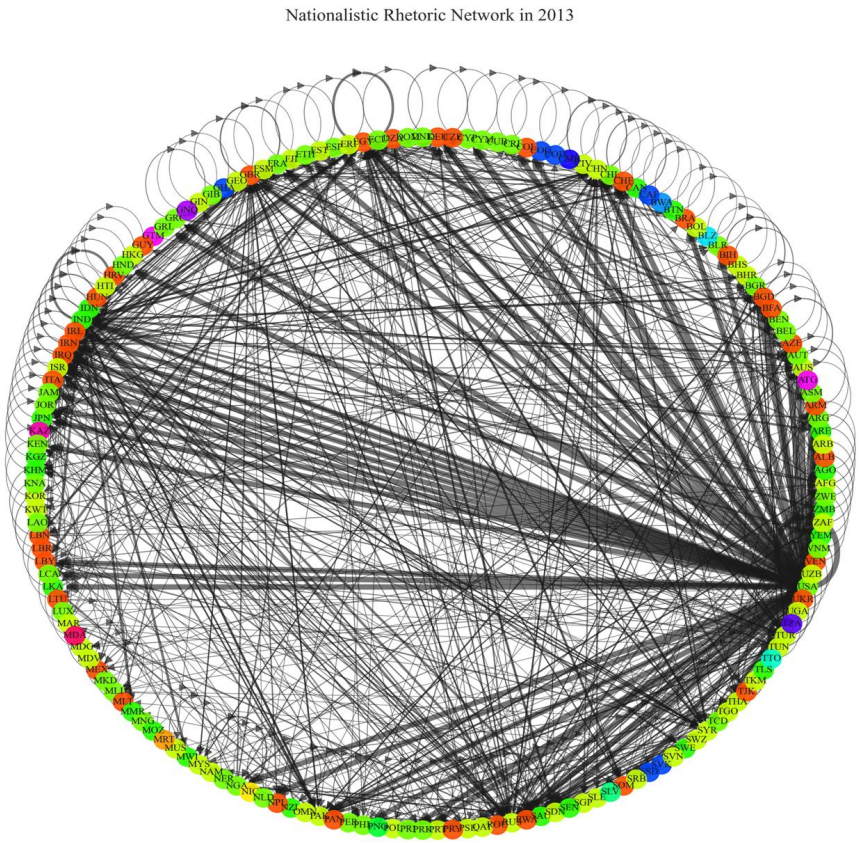
The nationalism network becomes denser



Source: Figure 2, number of unique undirected dyads per year.

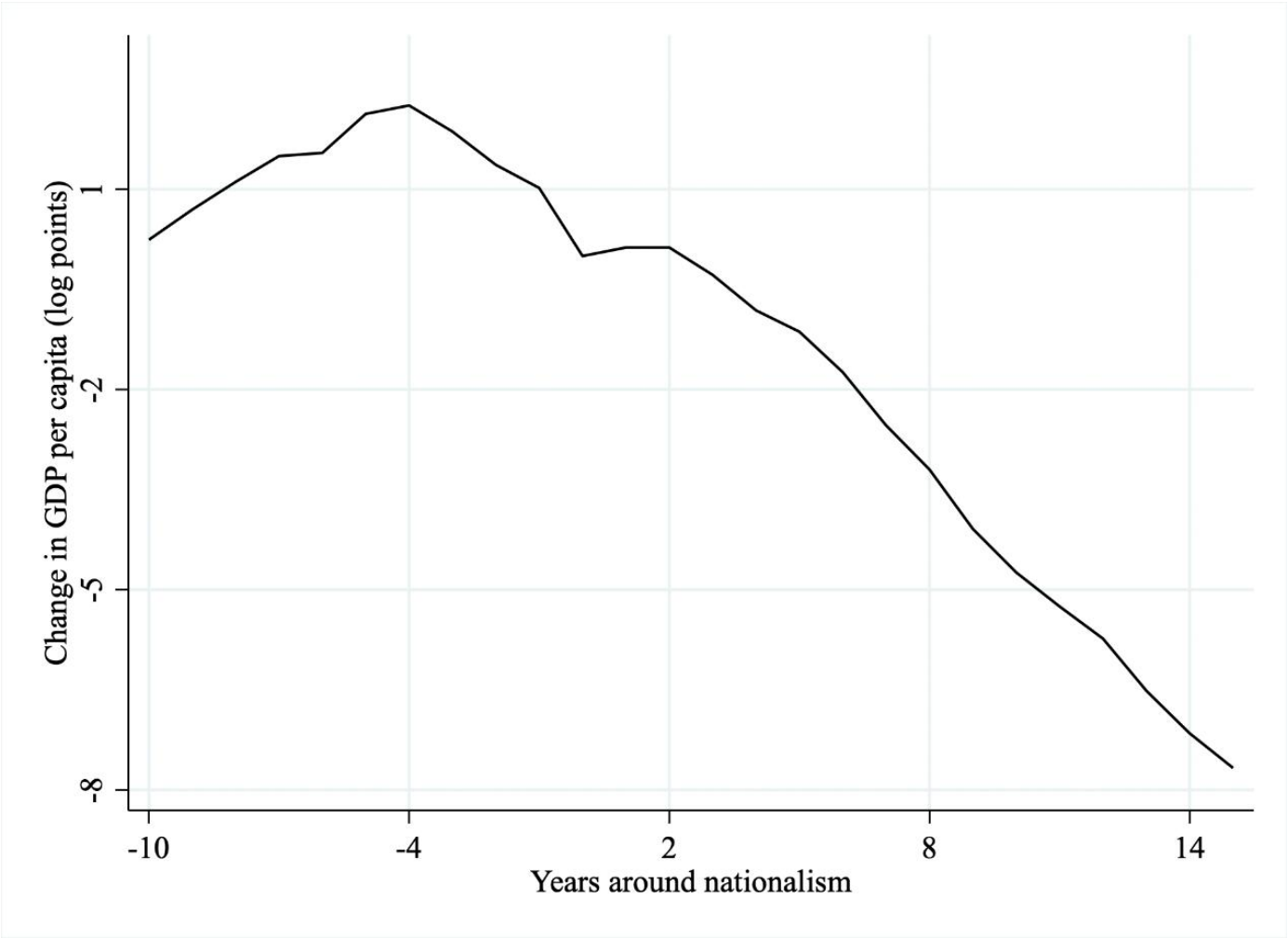
Network snapshots: 1979 and 2013





Source: Figure 3, nationalism network structures in 1979 and 2013.

Event-time growth pattern around nationalism



Source: Event-time GDP per capita trajectory around nationalist signals.

Data and controls

- Outcome: log GDP per capita in constant 2000 US dollars.
- Controls: debt, trade, civil unrest, financial flows, population, and demographic structure.
- Country and year fixed effects; World Bank macro-regions for regional analyses.

	N	Full mean	Nationalist	Non-natl.
GDP per capita	6,533	1,535.9	1,521.4	1,547.6
Debt (% GDP)	5,730	57.65	58.38	57.13
Trade (% GDP)	6,451	1.22	0.78	1.57
Civil unrest rate	5,625	23.64	15.89	29.17

Coverage

Country-year panel of 193 countries, 1979–2013; the exact sample varies with data availability.

Source: Table 1.

Dynamic panel baseline

$$y_{it} = \beta Nationalism_{it} + \sum_{k=1}^{p} \tau_k y_{it-k} + \ell_i + \mu_t + \varepsilon_{it}$$

- Country fixed effects absorb time-invariant national heterogeneity.
- Year fixed effects absorb global shocks.
- Lagged GDP captures the high persistence of income dynamics.
- The key identifying assumption is that, conditional on lagged GDP and fixed effects, nationalist shifts are not driven by divergent pre-treatment growth paths.

Baseline estimates: nationalism lowers GDP per capita

	Within: 1 lag	Within: 4 lags	A–B: 1 lag	A–B: 4 lags
Nationalism	$-.6164^{**}$	$-.5202^{**}$	-1.0496^{***}	$-.8059^{**}$
Effect after 20 years	-13.02^{**}	-8.41^{**}	-8.82^{***}	-7.61^{**}
Long-run effect	-8.08^{**}	-7.42^{**}	-8.12^{***}	-7.44^{**}
GDP persistence	$.953^{***}$	$.938^{***}$	$.881^{***}$	$.894^{***}$
Observations	6,340	5,761	6,147	5,568
AR(2) p-value	–	–	0.206	0.523

Headline magnitude

Across dynamic within and Arellano–Bond specifications, a permanent nationalist shift implies a long-run GDP-per-capita loss of roughly 7–8%, with larger 20-year losses in some specifications.

Source: Table 2. A–B denotes Arellano–Bond.

Robustness to economic and political controls

Additional controls / sample adjustment	Within long-run effect	A–B long-run effect
Baseline	-8.41^{**}	-7.61^{**}
Initial income $\times$ year FE	-12.01^{***}	-6.43^{**}
Government debt, lagged	-10.46^{***}	-7.68^{**}
Soviet-crisis indicators	-10.58^{**}	-5.92^{*}
Civil unrest, lagged	-10.50^{***}	-3.68^{**}
Trade exposure, lagged	-9.42^{***}	-9.01^{***}
Financial flows, lagged	-11.68^{***}	-4.33^{**}
Demographic structure, lagged	-8.37^{**}	-6.89^{***}

Result

The sign is invariant across all specifications; estimates remain economically meaningful after controlling for plausible economic and political confounders.

Source: Table 3.

Persistence checks

- GDP per capita is highly persistent. The model is re-estimated under imposed persistence values approaching a unit root.
- The medium-run effect remains negative and grows in absolute value as persistence increases.

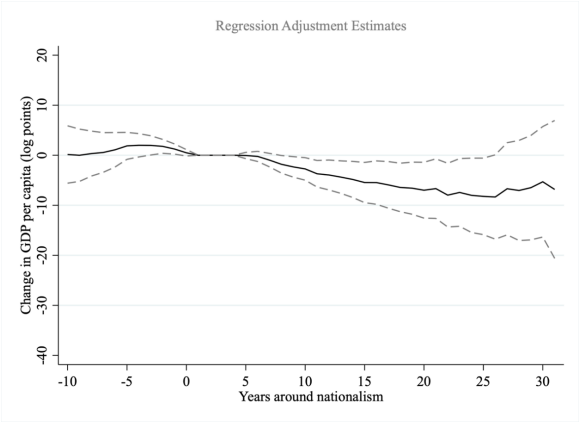
Imposed persistence ρ	0.90	0.94	0.98	1.00
Nationalism	$-.7658^{***}$	$-.6317^{***}$	$-.4973^{**}$	$-.4299^{*}$
Effect after 20 years	-7.49^{***}	-8.96^{**}	-10.91^{**}	-12.00^{*}
Observations	5,568	5,568	5,568	5,568

Source: Table 4.

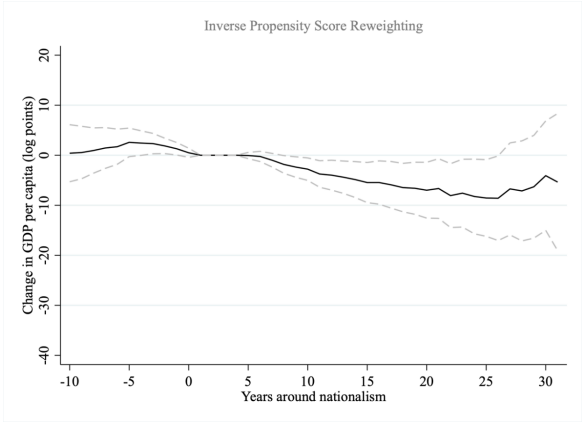
Semiparametric treatment-effect strategy

- Nationalism is treated as a discrete intervention: a transition from non-nationalist to nationalist status.
- Potential outcomes compare GDP paths under nationalism versus continued non-nationalism.
- The strategy conditions on four lags of GDP and common time shocks.
- Three estimators are used: regression adjustment, inverse propensity-score reweighting, and doubly robust estimation.

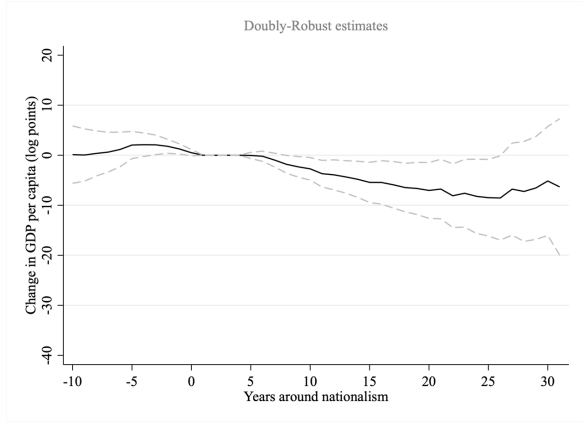
Semiparametric estimates: GDP declines after nationalist shift



Regression adjustment



Inverse propensity weighting

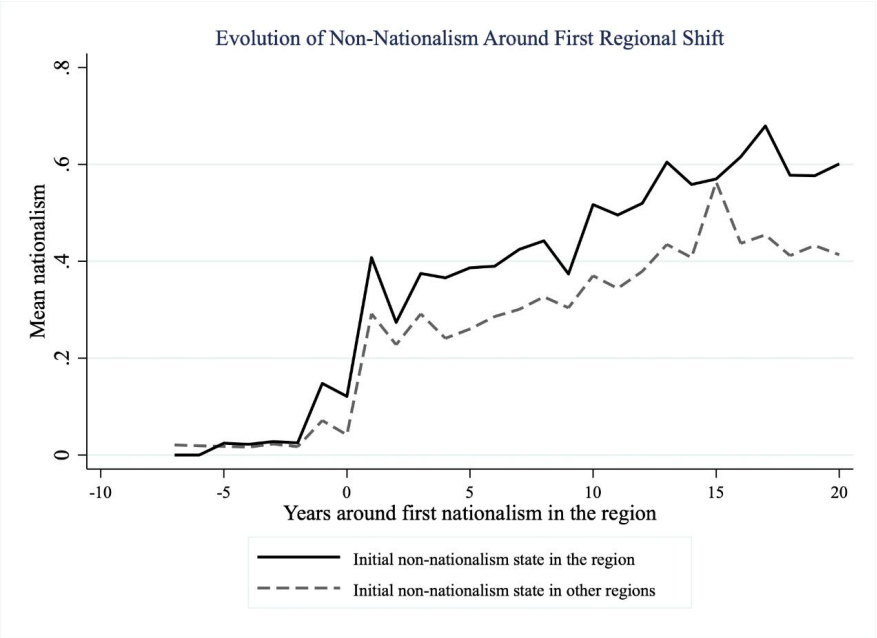


Doubly robust

Source: Figure 4. Original embedded graphics extracted directly from the paper PDF.

Regional nationalism waves as an instrument

- Nationalist sentiment diffuses regionally through ideological and geopolitical contagion.
- The instrument is the jackknife regional mean of nationalism among countries with similar initial status.
- Regional waves predict domestic nationalism while excluding the country itself.



Source: Figure 5, regional nationalistic waves.

2SLS estimates: regional waves confirm the negative effect

	Baseline	Trade	Unrest	Debt	Financial	Population
Nationalism	−3.99*	−3.68*	−4.01*	−4.02*	−3.85*	−4.97**
Effect after 20 years	−55.33**	−50.88*	−55.58**	−55.83**	−53.30*	−67.43***
Excluded-instrument F	13.66	13.16	13.58	13.58	13.56	12.86
Hansen J p-value	0.170	0.174	0.167	0.157	0.169	0.181
Observations	5,761	3,883	5,761	5,761	5,761	5,761

Identification

Nationalism is instrumented with up to four lags of the jackknife regional nationalism wave. First-stage strength and overidentification tests support the instrument set.

Source: Table 5; columns 2–7.

Nationalism and carbon footprint

- Nationalism is associated with lower aggregate CO_2 emissions and emissions intensity; sectoral estimates are smaller and less precise.
- The effect is consistent with reduced economic activity rather than necessarily with deliberate green policy.

	CO_2	CO_2/GDP	Buildings	Industry	Transport
Nationalism	$-.0111^{**}$	$-.0103^{*}$	$-.0078$	$-.0001$	$-.0011$
Effect after 20 years	$-.0841^{**}$	$-.0719^{*}$	$-.0568$	$-.0004$	$-.0086$
Persistence	$.887^{***}$	$.868^{***}$	$.877^{***}$	$.872^{***}$	$.877^{***}$
Observations	5,585	5,202	5,460	5,485	5,469

Source: Table 6.

Conclusion: a growth-climate trade-off

- Nationalism lowers long-run GDP per capita in dynamic, robust, semiparametric, and IV specifications.
- The macroeconomic channel likely runs through weaker openness, lower integration, lower investment, and weaker diffusion of ideas and technology.
- Nationalism can lower measured emissions, but this is an undesirable environmental gain if it comes through lost growth.
- Policy implication: climate strategy should rely on coordinated green industrial policy and multilateralism, not growth-depressing nationalist retreat.

Backup 1: CAMEO event-code logic

- Events focus on verbal conflict rather than cooperation or material conflict.
- The selected codes include escalatory claims, rejected dispute mechanisms, economic threats, diplomatic threats, and calls for mobilization.
- This captures both broad political nationalism and economic nationalism, including protectionist or retaliatory narratives.

Backup 2: alternative nationalism proxies

- Binary treatment: disconnected or isolated country-year status in the negotiation network.
- Continuous proxy: PCA of standardized centrality measures.
- Network measures: degree, closeness, betweenness, and eigenvector centrality.
- Bartlett's test supports sufficient intercorrelation for PCA construction.

Backup 3: semiparametric average treatment effects

Years from shift	−5–−1	0–4	5–9	10–14	15–19	20–24	25–29
Doubly robust ATE	1.77	0.10	−1.08	−3.92	−5.97	−7.42	−7.36
95% lower	−0.10	−0.03	−2.44	−6.87	−10.59	−13.84	−16.50
95% upper	3.64	0.23	0.28	−0.97	−1.36	−1.00	1.79

Reading the dynamics

Pre-treatment estimates are close to zero. Losses become statistically distinguishable from zero around years 10–14 and deepen through years 20–24.

Source: Table 4, Panel C.

Backup 4: environmental heterogeneity

Historical CO_2 interaction year	1979	1980	1981	Lagged
Nationalism	$-.0295^{***}$	$-.0306^{***}$	$-.0301^{***}$	$-.0199^{***}$
Nationalism $\times$ CO_2	$-.0039$	$-.0044^{*}$	$-.0043^{*}$	$+.0004$
Effect after 20 years	$-.2513^{***}$	$-.2604^{***}$	$-.2562^{***}$	$-.1690^{***}$
GDP $\times$ historical CO_2	$-.0002^{***}$	$-.0002^{***}$	$-.0002^{***}$	$-.0002^{***}$
Effect after 20 years	$-.1183^{***}$	$-.1185^{***}$	$-.1186^{***}$	$-.1149^{***}$

Interpretation

Emission reductions associated with nationalism are more pronounced in initially dirtier economies; the income-emissions relationship also weakens with historical pollution intensity.

Source: Table 7.

Backup 5: caveats and extensions

- Media-based nationalism measures can reflect both real ideology and reporting intensity.
- Network isolation is informative but may conflate nationalist disengagement with geopolitical or data-coverage changes.
- The sample ends in 2013; extending the measure to the post-2016 and post-COVID periods is a natural next step.
- Future work can separate economic nationalism, ethno-nationalism, and civic nationalism as distinct treatment dimensions.