

Democracy and Crisis Response: Implications for Global Energy Transition

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ECONOMIC ANALYSIS

GITHUB: github.com/DemoEnergy

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- **Purpose and research question.** This study asks whether economic crises alter the extent to which democratic institutions support a shift toward low-carbon energy, and whether that effect depends on development level. The project frames a “crisis–democracy–energy” triangle in which crisis episodes are the treatment, democracy is a key institutional moderator, and renewable share is the outcome of interest. The motivation is practical: infrastructure and investment choices made during recoveries persist for decades and therefore shape long-run emissions trajectories. In short, we want to know if crises systematically weaken the political commitment to the transition (or, in richer settings, provide an opening to accelerate it).
- **Data and empirical strategy.** I compile IEA energy balances, crisis chronologies from the global macro database, V-Dem indices, and World Bank macro controls into a balanced country–year panel (1990–present, 100+ countries). Identification exploits staggered difference-in-differences with country and year fixed effects and a triple interaction (Crisis \times Democracy \times GDP per capita) to capture how institutional effects vary with development. Key controls include lagged renewable shares (to capture path dependence), fossil-fuel measures, and standard macro covariates to reduce confounding. Robustness checks use alternative democracy measures, crisis definitions, and placebo timing tests.
- **Core findings.** Crises tend to push many developing countries back toward fossil fuels, while wealthier democracies more often sustain or expand renewables during recoveries. Lower- and upper-middle income countries show the largest post-crisis increases in fossil-fuel share, consistent with recovery choices that favor quick, low-upfront-cost energy solutions. Results are robust across specifications and are strongest for banking and sovereign-debt shocks, which compress fiscal space and incentivize short-term, familiarity-based investments.
- **Institutional and resource heterogeneity.** Democracy alone does not guarantee protective behaviour under stress; its effect depends heavily on oil dependence and fiscal buffers. Democracies with moderate oil revenues often increase fossil use after crises because incumbents respond to short-term voter pressures (jobs, prices) rather than long-term climate goals. Resource-rich autocracies produce mixed outcomes: some cut fossil shares when export markets collapse, others double down to restore revenues. Thus, the political-economic mix matters more than any single institutional label.
- **Policy implications and next steps.** To prevent recurring reversals, multilateral finance should scale crisis-resilient green instruments (contingent concessional lines, rapid green emergency finance) and streamline technical assistance to shorten renewable lead times. Commodity-price risk sharing and coordinated stabilization can blunt the fiscal incentives for fossil lock-in. Next manuscript steps are final descriptive tables, dynamic lag specifications, and heterogeneity analyses by income and crisis type; policy outreach should target development finance architects who design crisis-era lending windows.

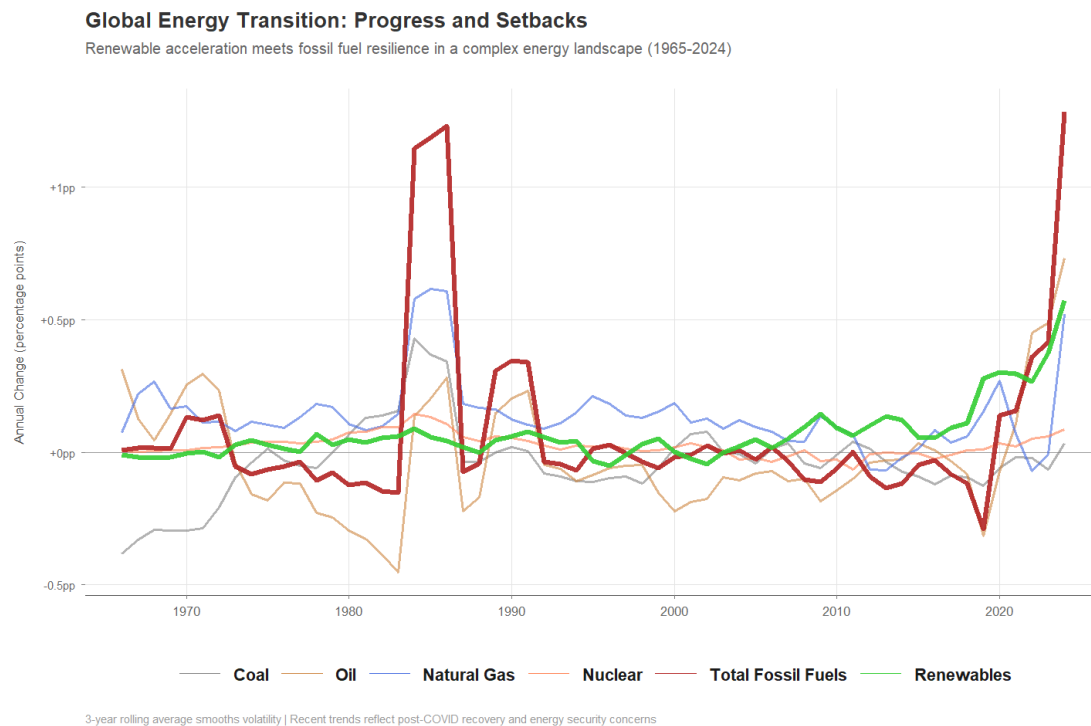
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Background

After the COVID-19 pandemic, renewable energy experienced a clear acceleration worldwide (see Figure 1). This surge was driven by fiscal recovery packages and renewed private investment in green technologies, and yet fossil fuel consumption also rose at the same time (...both grew, albeit for different reasons). Consequently, the headline that “renewables are booming” masks an important nuance: growth in renewables has often occurred alongside — not instead of — fossil fuel expansion. In short, simultaneous expansion complicates the simple narrative that increasing renewable capacity automatically displaces fossil-based supply.

Financial crises act as revealing stress tests for national energy choices and policy priorities. When budgets tighten and unemployment rises, governments frequently prioritise reliability and short-term recovery over longer-term decarbonisation goals, and therefore they lean on established fossil-fuel infrastructure. Our analysis, which draws on cross-country energy datasets (1965–2024), shows a repeated pattern where crisis responses tilt energy systems back toward fuels that are perceived as cheaper or more reliable in the short run. Put differently, crisis-era decisions often create lock-in effects because new infrastructure and investment paths become difficult to reverse later.

Figure 1. Global Energy Transition: Progress and Setbacks



Sources: Author’s calculations based on multiple international datasets (see full methods).

Disaggregating the trends by income level helps explain why some countries can use

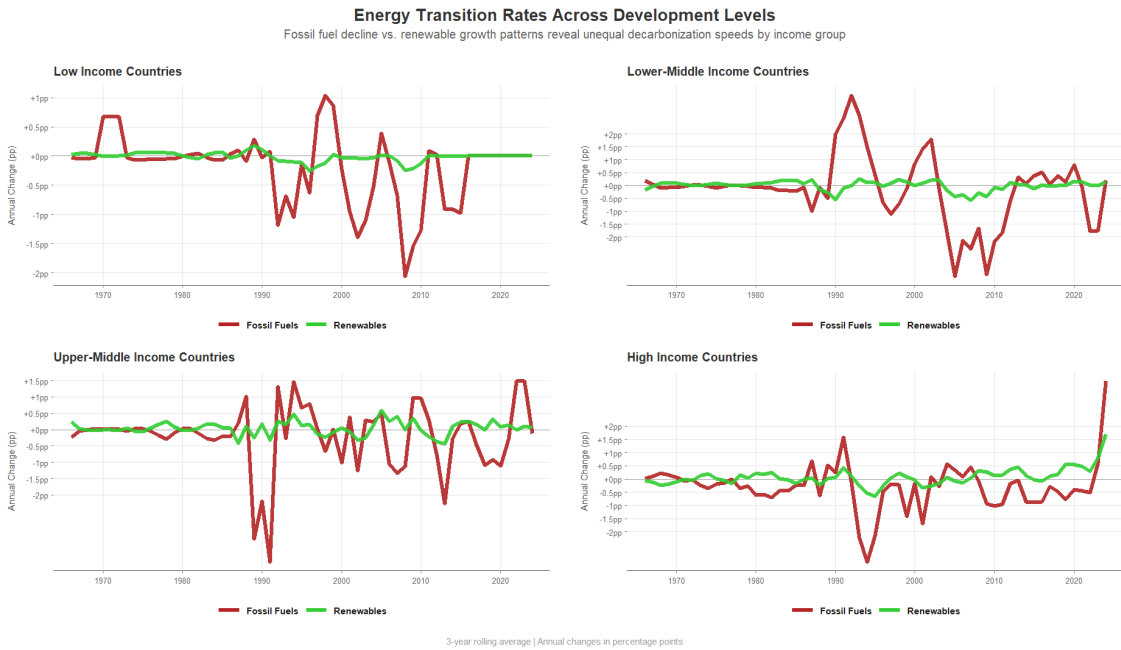
crises to accelerate the transition while others cannot (see Figure 2 and Table 1). Low-income countries often show apparent declines in fossil-fuel share, but much of this reflects low baseline energy consumption and reliance on traditional biomass for cooking and heating (...which is counted as “renewable” in some datasets). By contrast, lower-middle and upper-middle income countries display the largest increases in fossil-fuel reliance during recovery episodes, since industrialisation and urbanisation sharply raise energy demand and decision-makers prioritise proven, low-cost power sources. Thus, the income profile of a country matters because it shapes the short-term trade-offs between affordable energy and low-carbon investment.

Table 1. Energy Shares and Profiles by Income Group (2024)

Country Group	Fossil Fuel Share	Renewable Share
Low Income Countries	0.0%	0.0%
Lower Middle Income Countries	15.9%	2.0%
Upper Middle Income Countries	34.1%	5.1%
High Income Countries	45.3%	12.8%

Notes: Energy shares are based on 2024 data. Fossil fuel and renewable shares are percentages of total primary energy consumption.

Figure 2. Energy Consumption Rate grouped by Income Levels

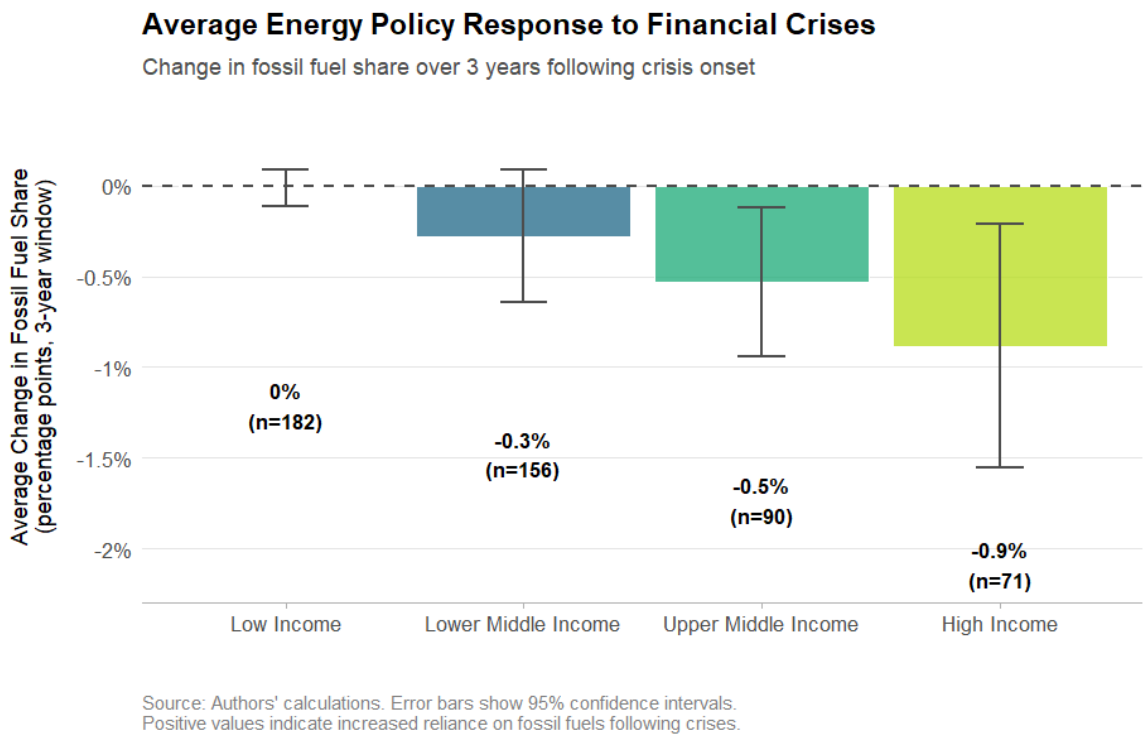


Sources: Author’s calculations combining national energy balances and international compilations.

Examining crisis-specific policy responses makes the divergence even clearer across income groups (see Figure 3). Lower-middle and upper-middle income countries tend to increase their fossil-fuel share in the three years after a financial shock, probably because recovery packages and private investment opt for speed, scale, and fa-

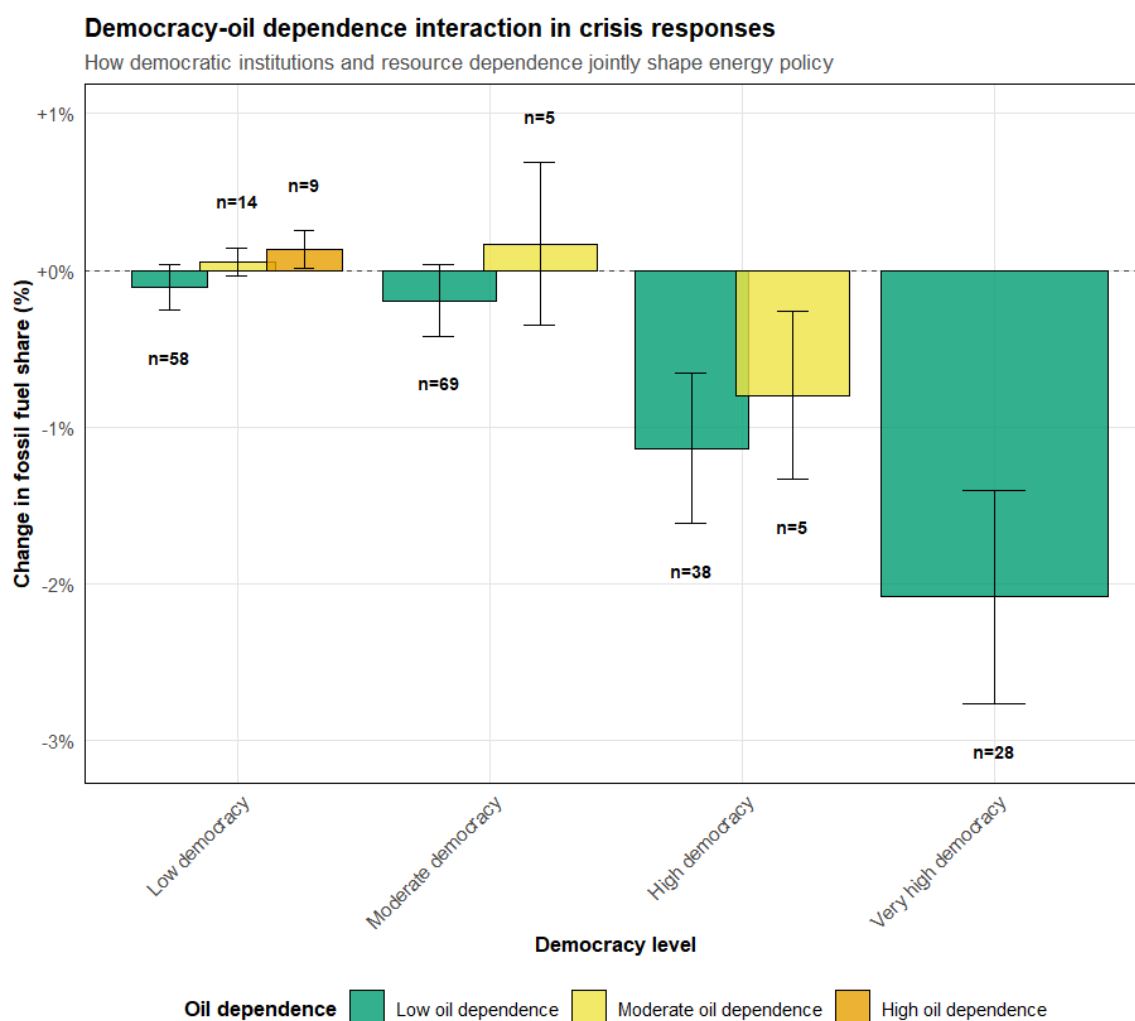
miliarity rather than low-carbon alternatives. High-income countries, however, more often reduce fossil-fuel shares after crises, since they can deploy green stimulus and retrofit existing systems to be more efficient. Therefore, what looks like a single global trend is actually a series of distinct responses shaped by fiscal space, institutional capacity, and political choices.

Figure 3. Average Energy Policy Response to Financial Crises



Sources: Author’s calculations using crisis episodes (1990–2018) and 3-year post-crisis changes in energy mix.

Political institutions and resource endowments jointly shape crisis responses in non-intuitive ways. Democracies do not uniformly choose cleaner energy when under pressure; instead, the interaction with oil dependence matters a great deal (see Figure 4). Specifically, democracies with moderate oil dependence often increase fossil-fuel use after crises (...likely because incumbents respond to short-term voter demands for jobs and stable prices), whereas very oil-dependent states show highly variable responses depending on whether they compensate with fiscal buffers or double down on production. In other words, neither democracy nor resource dependence alone predicts outcomes; the political-economic mix produces the observed heterogeneity.

Figure 4. Democracy–oil dependence interaction in crisis responses

Sources: Author's calculations showing mean changes in fossil-fuel share by democracy level and oil dependence (3 years post-crisis).

The single most worrying result is the vulnerability of middle-income countries to backsliding on the transition. These countries have moved beyond low-income energy constraints, yet they lack the fiscal headroom that wealthy nations enjoy; consequently, they are most likely to lock in fossil-fuel infrastructure during recoveries. Because middle-income economies will account for the bulk of near-term global energy demand growth, their crisis-driven choices will disproportionately determine whether global climate targets remain achievable. Therefore, international climate policy that focuses mainly on the poorest countries risks missing a central problem (...and the policy community must pivot to address this gap).

Finally, the evidence points to clear policy implications for development finance and global climate governance. First, resilient financing instruments (for example, contingent green finance or crisis-proof concessional lending) should be scaled up so that countries can choose low-carbon investments even under fiscal stress. Second, technical assistance and rapid deployment mechanisms for renewables can lower the perceived risk and implementation time compared with fossil options. Third, conditional

but flexible support—combined with coordination on commodity price shocks—can prevent the common reflex to return to high-carbon assets during downturns. In sum, if the global community wants a durable energy transition, it must design instruments that work when economies are fragile, because otherwise every crisis will erase years of progress.

Literature Review

to be continued.....

Appendix

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