The Institutional Sources of Energy Transitions

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Introduction

• Puzzle: what determines scope and nature energy transitions across countries?
• Lessons from 1970s oil shocks, implications for climate change
• Discussion of implications for Japanese energy policymaking
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Theory

• Political institutions affect the degree and nature of energy transitions

• Two mechanisms: insulation and compensation

• Policy tools:
  – Demand-side policies: Imposing costs on consumers, e.g., gas taxes, carbon taxes
  – Supply-side policies: Imposing costs on producers, e.g., fuel economy standards, clean energy mandates
Three Political Options

Government Policymakers have three choices when faced with the need for energy transition:

1. “Ignore” → insulation from economic losers
2. “Pay off” → compensation of losers
3. “Do nothing” → policy retreat/wavering

Four Political Institutions

• Focus on four institutions:
  – Electoral rules (insulation from consumers)
  – Welfare state (compensation of consumers)
  – Bureaucratic insulation (insulation from producers)
  – Interest intermediation (compensation of producers)

• Countries without these institutions face difficulty overcoming resistance to change

• These institutions also determine patterns of transition
Electoral Rules

• Proportional electoral rules tend to make politicians less sensitive to backlash from voters / consumers compared to majoritarian rules (Rogowski & Kayser, 2002; Bawn & Thies 2003)

• Increases ability of governments to facilitate energy conservation through demand-side measures: e.g. gasoline taxes, carbon taxes

• Under majoritarian rules, demand-side measures tend to solicit voter backlash (gasoline taxes as “third rail” of US politics)
Gasoline and electricity prices

- Gasoline
- Electricity

Year:
- 1955
- 1960
- 1965
- 1970
- 1975
- 1980
Welfare State Institutions

• Strong welfare state can compensate energy consumers & cushion the blow of demand-side policy measures
• France: majoritarian electoral system but strong welfare state institutions going back to mid-20th century (e.g. incorporation of Alsace Lorraine)
• During oil shocks, higher consumer energy taxes were compensated through double-digit annual expansion in social welfare spending
Bureaucratic Insulation

• Strong, autonomous bureaucracies can accelerate industrial energy transition
• France: Dirigiste state & Messmer Plan promotes transition to nuclear energy
• Japan: MITI role in improving energy efficiency and diversifying supply
Interest Intermediation

• Corporatist institutions can facilitate compensation of declining industries, creating consensus in favor of transition

• Germany: economic support for declining coal sector while investing in renewable energy

• UK: minimal change during oil shocks as state adopts laissez faire approach
Empirical Analysis

• Difference-in-differences using oil shock and presence of insulation or compensation institutions.

• Findings:
  – Demand-side: countries with PR or welfare state increased gasoline tax rates more rapidly
  – Supply-side: countries with independent bureaucracy or corporatism reduced dependence on oil in power generation more rapidly

• Supplement with case studies and discourse network analysis to examine politics of transition
General patterns

• PR Electoral System + Corporatism (e.g. Germany, Denmark): demand & supply-side transition with producer compensation
• Bureaucratic Insulation + Welfare State (France): supply-side and demand-side transition with consumer compensation
• Absence of insulation & compensation mechanisms (USA, Australia): limited transitions
Implications for Climate Change

- Electoral insulation: High-income democracies with proportional rules have adopted more ambitious climate policies and stringent energy efficiency policies (recent work by Finnegan, Lipscy).

- Bureaucratic insulation: Autonomous environmental bureaucracies allow for greater goal attainment in climate policy, e.g. CA vs DE (Meckling and Nahm 2018).

- Corporatism: Germany’s coal phase-out through buying support from energy-intensive industry and regions

- Welfare state: compensation less feasible compared to 1970s due to budgetary pressures and austerity across OECD countries
Figure 2: Number of National Carbon Taxes or ETS by Electoral System, 1990-2017
Figure 3: Electoral Institutions and Effective Carbon Tax Rate, 2015
Implications for Japanese Energy Policy

• Institutional changes in Japan have made energy transitions today more difficult compared to 1970s
• Electoral reform (1994): shift from relatively proportional single-nontransferable vote multimember district system (中選挙区制) to mixed system emphasizing single member districts (小選挙区制)
• Administrative reform (1998): reduces autonomy of bureaucracy and centralizes authority around politicians, especially Prime Minister
Japan’s Institutional Configuration

• Oil Shocks:
  – Demand-side: SNTV-MMD electoral system allows robust demand-side measures, limited compensation
  – Supply-side: Independent authority of MITI allows robust supply-side measures in coordination with industry

• Contemporary Climate Change:
  – Demand-side: majoritarian electoral system and weak welfare state → no mechanism for insulation or compensation
  – Supply-side: Weakened bureaucratic authority limits insulation; compensation still possible but budgetary constraints
Consequences

• Political context of Japanese energy policy has become more like the USA
• Difficulty of raising consumer energy prices such as gasoline tax, carbon tax
• Industries tied to fossil fuels have stronger influence to obstruct transformational policies

→ Ambitious response to oil shocks not matched by ambitious response to climate change
Figure 10: Japanese Automobile-related Taxes and Fees
Figure 11: Japanese Automobile Weight Tax and Acquisition Tax Revenues per Vehicle (1994=1)
Figure 12: Household Electricity Prices in Japan and Other OECD Countries (1978-2016)
Figure 6: Trends in CO$_2$ Emissions Intensity: Japan vs. Synthetic Japan
Expert Evaluation of Japanese Climate Policy
(International Percentile Rank, Germanwatch)

DPJ Government

Abe Government

- National Policy (GW)
- International Policy (GW)
Japan and Climate Change: Moving Forward

• Japanese public supports climate change mitigation, Japan faces increasing international criticism
• Increasing authority of politicians means political leadership could make important difference
• Next generation leaders (e.g. Kono Taro, Koizumi Shinjiro) more personally invested in environmental issues compared to Abe
• UK 2008 Climate Change Act may serve as an important model: legally binding targets to overcome weak insulation & compensation institutions