

The Paris Agreement: Climate Change Policy in the Post-2020 World

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Basic Assessment of the Paris Climate Talks and the Paris Agreement

- Paris climate talks (December 2015) were *very successful*
- Paris Agreement
 - A *landmark* climate accord, a dramatic *departure* from previous 20 years
 - Provides a broad *foundation* for meaningful future progress
 - So, new approach *can be* key step toward reducing threat of climate change
 - *But* whether the Paris Agreement is successful environmentally may not be known for *decades* (unless, of course, it fails sooner – politically or in terms of implementation)
- So, only time will tell whether the Paris Agreement is successful, ...
 - ... but it's fair to say *now* that the *Paris climate talks* were a great success.
- Why do I say this?

Outline

- Historical background: UNFCCC, Kyoto Protocol, Durban Platform
- Lead-up to Paris: China-USA joint announcements
- Pre-Paris scorecard
- The Paris Agreement
- Major challenges for eventual success, and the role of international linkage
- National policies are key
- Institutional path ahead
- Beyond Paris

International climate negotiations

■ The Rio Earth Summit (1992)

- United Nations Convention on Climate Change (UNFCCC) – principle of “*common but differentiated responsibilities*” (CBDR)

■ First Conference of the Parties (COP-1, Berlin, 1995)

- Berlin Mandate – interpretation of CBDR: *Annex I (OECD+/-) countries will commit to targets for emission reductions, but no commitments for other countries*

■ Kyoto Protocol (1997)

- KP *codified* the Berlin Mandate with quantitative targets for *Annex I countries only*

■ The Challenge

- Annex I countries alone *cannot* reduce global emissions (growth is in other countries)
- Fifty non-Annex I countries have *greater* per capita income than poorest of Annex I
- Dichotomous distinction made progress *impossible*

International Climate Negotiations (continued)

- **Bali Action Plan (COP-13, 2007)**
 - First provided structure for actions by non-Annex I countries

- **Copenhagen Accord (COP-15, 2009) & Cancun Agreements (COP-16, 2010)**
 - Began to *blur* the Annex I/non-Annex I distinction

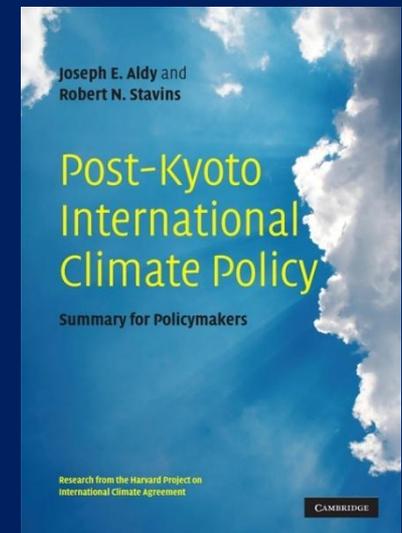
- **Durban Platform for Enhanced Action (COP-17, 2011)**
 - Mandate to adopt by 2015 (in Paris) a new legal framework to include *all countries* for implementation in 2020

 - This *broke* with the Berlin Mandate

 - At a minimum, it signaled a new opening for innovative thinking , which we took very seriously at the *Harvard Project on Climate Agreements* ...

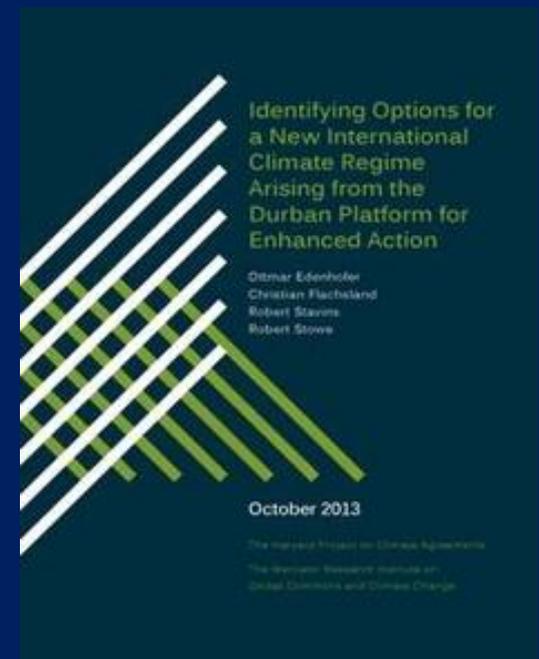
The Harvard Project on Climate Agreements

- Mission: To help identify key design elements of a scientifically sound, economically rational, and politically pragmatic international policy architecture for global climate change
- Drawing upon research & ideas from leading thinkers around the world from:
 - Academia (economics, political science, law, international relations)
 - Private industry
 - NGOs
 - Governments
- 75 research initiatives in Argentina, Australia, China, Europe, India, Japan, and the United States
- Intensive work at the annual climate negotiations, and other venues



Lead-Up to COP-21 in Paris

- Central framework was from the *Durban Platform for Enhanced Action* (2011)
- A “hybrid” international climate policy architecture
 - Bottom-up: “*Intended Nationally Determined Contributions*” (INDCs, targets and actions) that arise from – or at least are consistent with – national policies and goals
 - Top-down: Centralized oversight, guidance, and coordination
- Great challenges remained ...
- But positive inertia provided by China-USA joint announcements in November 2014 and September 2015 ...



Origins of China-USA Joint Announcement: A Convergence of Perspectives

1. Annual CO₂ emissions have converged

- U.S. emissions in 1990 were twice Chinese, but China overtook U.S. in 2006
- These are the world's two largest emitters

2. Cumulative CO₂ emissions will likely converge in future decades

- Date will depend on relative rates of economic growth *and* carbon policies

3. Both countries have huge coal reserves, as well as natural gas

- Both countries have concerns about health impacts of correlated pollutants

4. Both countries have featured use of sub-national cap-and-trade policies

5. Convergence of global geopolitics

- 20th century was the “American Century”
- 21st century may be the “Chinese Century”

Significance of the China-USA Joint Announcements – November 2014 in Beijing & September 2015 in Washington

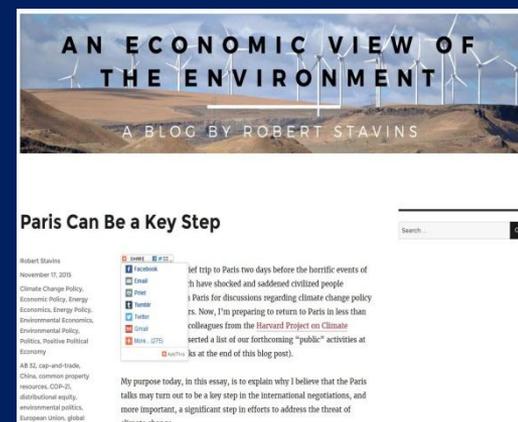
- **China-U.S. quantitative pledges were meaningful**
 - U.S. 26-28% cut below 2005 by 2025: *doubles pace* of cuts under previous commitment
 - China emissions peak in 2030 & share of non-fossil energy generation increases to 20%: will require “more aggressive measures” (MIT analysis)

- **China-U.S. cooperation provided impetus for other countries to take action**
 - Kyoto Protocol covers only 14% of global emissions
 - China & U.S. INDCs cover nearly 40% of global CO₂ emissions
 - Provided incentives for other large emitters to announce INDCs that were more ambitious than they otherwise would have been

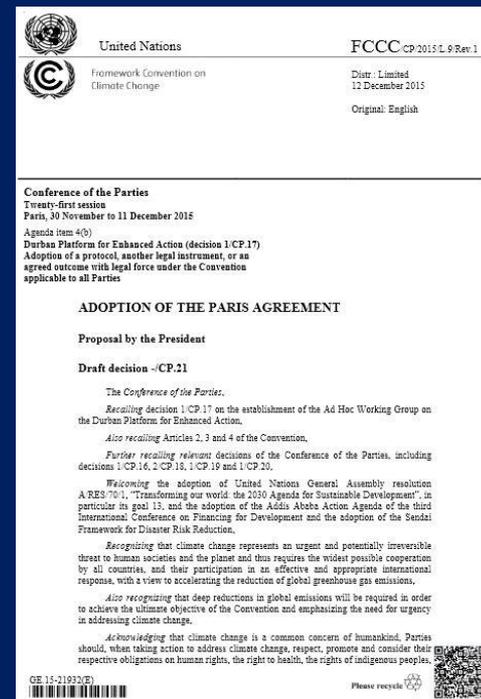
- Likelihood of *successful outcome* in Paris was *dramatically increased*

My Pre-Paris Scorecard (November 17, 2015)

1. **Include countries accounting for approximately 90% of global emissions in the submitted INDCs** (compared with 14% in current commitment period of the Kyoto Protocol)
2. **Establish credible reporting and transparency requirements.**
3. **Continue setting up system to finance climate adaptation (and mitigation)** — the famous \$100 billion commitment. Key question was whether it would include private-sector finance, in addition to public-sector finance (that is, foreign aid).
4. **Agree to return to negotiations periodically, such as every 5 years, to revisit the ambition and structure of the INDCs.**
5. **Put aside unproductive disagreements:**
 - “Loss and Damage” looks to rich countries like unlimited liability for bad *weather* in developing countries; and
 - Insistence by some that INDCs themselves be *binding under international law* (no U.S. participation)
 - Futile to pursue such unproductive elements



The Paris Agreement



- **12-page Agreement (plus 19-page Decision)**
- **Aspiration: Limit Warming to 2° C (1.5° C) (Article 2)**
 - Not based on science, but endorsed by most scientists
 - Not based on economics
 - Less important than *critical components* of the Agreement
- **Broad Scope of Participation (Article 3)**
 - *Intended Nationally Determined Contributions (INDCs)* represent 187 countries, 96% of global CO₂ emissions (compared with 14% coverage by Kyoto Protocol)
 - Revision of (more ambitious) INDCs every 5 years (Article 4)
- **Transparency Requirements (Articles 4 & 13)**
 - Domestic monitoring, reporting, and verification
 - Eventually same standards both for developed and developing countries

The Paris Agreement (continued)

- **International Policy Linkage** (Article 6)
 - Provision for linkage among heterogeneous policies
 - “Internationally Transferred Mitigation Outcomes” (ITMOs) – no mention of “market”
 - Greatly reduces costs, facilitates possible convergence to single global carbon price
- **Global Finance** (Article 9)
 - Recommitment to \$100 billion/year
 - Revisit in 2025, using \$100 billion as a floor
 - Numbers not in Agreement, only in accompanying Decision
- **Loss and Damage** (Article 8)
 - Highly contentious issue – essential from perspective of most vulnerable countries
 - But necessary from perspective of largest emitters: Par. 52 of the Decision – Parties agree that this “does *not* involve or provide a basis for any liability or compensation.”
- **Legally Binding** (Articles 20 & 21)
 - Agreement comes into force when at least 55 countries accounting for at least 55% of global GHG emissions have approved it
 - Individual INDCs are in a “public registry” separate from the Agreement

Success?

- Were Paris climate talks a success? Yes, given my Pre-Paris scorecard:
 - Broad scope of participation
 - Transparency requirements
 - International policy linkage
 - Global finance
 - Loss and damage issue
 - Legal binding issue
- Will the Paris Agreement itself be successful?
 - No one knows
 - It may be decades before this can be assessed

Key Challenge for Eventual Success of Paris Agreement

■ Central Question

- Can Paris Agreement, with INDCs *anchored* in domestic political realities, ...
- ... *adequately* address emissions with sufficient ambition?
- Are there ways to enable and facilitate *increased ambition* over time?
- **Linkage of regional, national, and sub-national policies can be part of the answer** – connections among policy systems that allow emission reduction efforts to be redistributed across systems

■ Cap-and-trade emerging as instrument of *choice* in many countries

- Regional, national, and sub-national levels
- European Union, New Zealand, Northeast USA, California, Quebec, Ontario, China, Korea, etc.

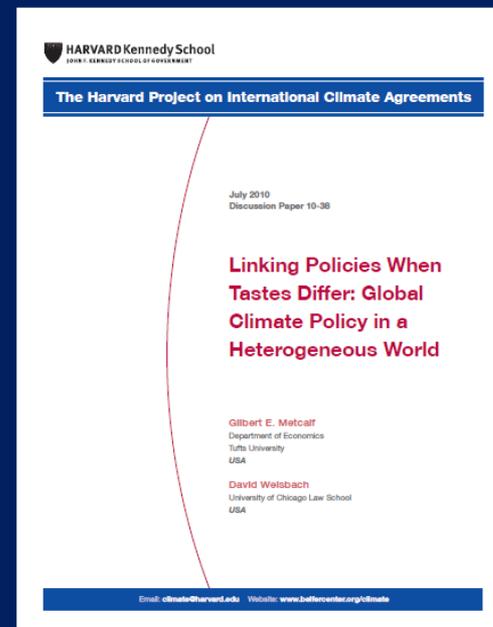
■ But, national (& sub-national) policies will be *heterogeneous* ...

Heterogeneous Climate Policy Instruments

- Major CO₂ cap-and-trade regimes in place & announced
 - European Union Emissions Trading System, \$8/ton (2008-)
 - New Zealand Emissions Trading Scheme, \$6/ton (2008-)
 - U.S. Regional Greenhouse Gas Initiative, \$8/ton (2009-)
 - California's AB-32 GHG Cap-and-Trade System, \$13/ton (2013-)
 - Korea's Emissions Trading Scheme, \$10/ton (2015-)
 - China's national CO₂ cap-and-trade system (2017-)
- Selected carbon (and related energy) taxes
 - Finland (1990), Norway (1990), Sweden (1991), Denmark (1992), Costa Rica (1997), British Columbia (2008), Switzerland (2008), Ireland (2010), Iceland (2010), Japan (2012), Mexico (2012), United Kingdom (2013), Chile (2014), France (2014), South Africa (2016)
- Many other jurisdictions will *not* employ carbon pricing, but will use *performance standards* and/or *technology standards* instead
 - Less cost-effective than carbon pricing
 - Muted/distorted price signals
 - Still, in some cases will place an implicit shadow-price on carbon

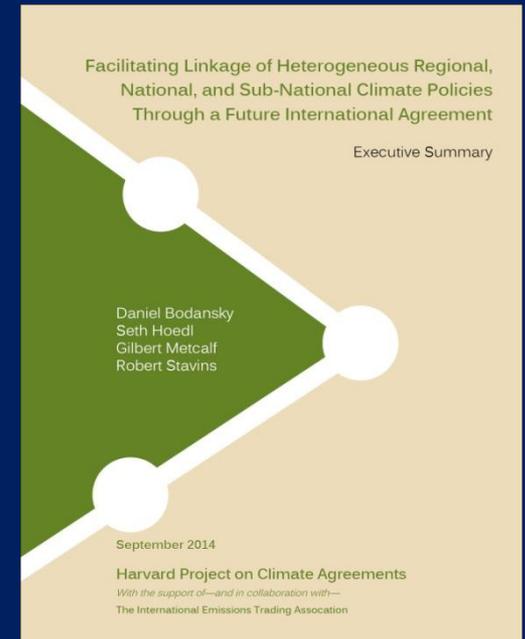
Policy Linkage in a Heterogeneous World

- Global agreement must accommodate heterogeneity – both in locus of regulation (super-national to sub-national) and policy instrument:
 - Cap-and-trade systems
 - Carbon tax systems
 - Emission reduction credit systems
 - Command-and-Control regulations
- Linkage among heterogeneous policies ranges from straightforward to infeasible
- But benefits of linkage are considerable
 - Cost savings → greater ambition
 - Reduce market power
 - Reduce total price volatility
 - Allow for distributional equity (UNFCCC’s “common but differentiated responsibilities”) *without* sacrificing cost-effectiveness



What needed to be in the Paris Agreement to facilitate effective linkage?

- “Facilitating Linkage of Heterogeneous Regional, National, and Sub-National Climate Policies through a Future International Agreement”
- First principle: Do No Harm ...
 - If poorly designed, the 2015 agreement could actually have inhibited effective linkage
 - Example: “supplementarity requirements,” as were discussed in Kyoto (and included in KP)
- What did the 2015 agreement need to include?
 - Statement that *countries can achieve parts of their INDC targets by financing or otherwise facilitating actions in other jurisdictions*
 - Accomplished in Article 6!



National Policies are Key

- **Direct Impacts of Paris Agreement**

- *Increases perceived likelihood* of: (1) *persistence* of existing regulation; and (2) *initiation* of new regulation
 - Consequent *increase* in anticipated *carbon shadow price* will affect diverse business decisions
- Direct impacts *not* the most important, because greatest impacts through INDCs

- **Most Important are *Indirect* Impacts**

- Policy actions undertaken by Parties to Agreement in *187 countries* ...

National Policies: Example of USA

- U.S. INDC target of 26-28% CO₂ emissions reduction below 2005 by 2025
 - CAFE Standards – doubles motor-vehicle fuel efficiency to 55 MPG by 2025
 - Appliance & Equipment Efficiency Standards – cover 90% of residential, 60% of commercial, and 30% of industrial energy use
 - California’s AB-32 – returns emissions to 1990 level by 2020 (85% of emissions)
 - Regional Greenhouse Gas Initiative – electricity sector in nine states
 - Clean Power Plan – effects on investment, dispatch, & retirement in electricity sector (coal → natural gas → renewables & nuclear; cap & trade)
 - But, Supreme Court Stayed Implementation of CPP (February 2016). What does decision mean for Achievement of U.S. INDC? Only a stay, but ...
 - Eliminates stranded asset argument re opposition to “repeal” of CPP
 - Surely makes it more difficult to achieve INDC. Options?
 - Refineries under Clean Air Act Section 111(d)? Unlikely.
 - CAA Section 115? Unlikely.
 - But, *wind & solar tax credit extensions* -- surprise in December 2015 budget
 - *Not* part of INDC calculation
 - But can they cut coal-fired generation enough to meet CPP goals?

National Policies (continued)

- **Domestic Policies can be Credible and Effective**
 - *Binding* where it matters – under national and sub-national laws and regulations
 - Will send *price signals* that affect business decisions, ...
 - ... but – in the U.S. case – *not* across the board, *nor* with ideal efficiency (as would a national carbon tax or a national CO₂ cap-and-trade system)
- **Impacts on Specific Companies and Business Lines**
 - Impacts will vary greatly, both geographically and sectorally
 - Fuels & Energy Generation
 - Bad news for coal (*ceteris paribus*), even in short term; mixed for natural gas, muted for oil
 - Good news for renewables and nuclear (again, *ceteris paribus*)
 - In most other sectors, climate policies increase energy costs, so simple rule-of-thumb:
 - Good news for producers of energy-consuming durable goods (Boeing)
 - Bad news for consumers of those same energy-consuming durable goods (United Airlines)

The Institutional Path Ahead

- **Copenhagen** illustrated problems with process under United Nations
 - 197 countries, when 20 account for about 90% of global emissions; and UNFCCC (default) voting rule is consensus
- **Major Economies Forum** – accounts for about 90% of global emissions; but initiated and led by USA, and forum for discussion, not negotiation
- **G20** – finance ministers; similar to MEF list
- Other multilateral, bilateral, including China-USA

The Institutional Path Ahead (continued)

■ Climate Clubs

- Bottom-up nature of Paris Agreement opens doors for “coalitions of the willing”
 - Clubs could be parallel to, within, or outside of UNFCCC
- Possible Approaches –
 - Club of National Carbon Taxes (Victor 2011, Barrett 2013, Nordhaus 2015)
 - Carbon-Market Coalitions (Stewart 2013, Morgan 2013, Keohane 2014)
- Benefits: greater c/e, market liquidity, reduced concerns about competitive distortions, free-riding, and carbon leakage
 - By providing exclusive membership benefits, club can encourage participation
- *But* need for exclusive benefits raises serious concern: the only credible recommendation is for imposition of carbon duties or *uniform tariff* on non-members (departs from 40-year evolution of international trade law)

Beyond Paris

- Paris climate talks a success, but won't know about success of Paris Agreement for many years
- International cooperation essential, but key action will be at national levels
 - Paris Agreement provides important opportunity for new path forward
 - One key necessary condition met: adequate scope of participation
 - Other key necessary condition: adequate ambition of policies
 - Paris is only the first step, review INDCs every 5 years
 - But even Paris INDCs significant: 2100 political target 2° C; BAU 5-7° C; Paris INDCs *can* lead to 3.5° C (Montreal Protocol amendment to address HFCs likely to shave an additional 0.5° C)
- In years to come, major locus of international cooperation ...
 - ... may continue to be UNFCCC, or other existing venues, or climate clubs
- But under any of these venues, importance of carbon-pricing and linkage remain!

For More Information

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