National Emission Tax and International Agreements

Gjalt Huppes
CML, Leiden University

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Summary

1. Current policies not effective yet
2. Political philosophy directions: efficient power vs domains
3. Governance directions diverging
4. Institutional approach dominant LT
5. Reasoning towards emission pricing design
6. Most simple national CO_2 emission tax
7. International emission tax agreement *CTC*
8. Political perspectives

[9. Instrument transformations]

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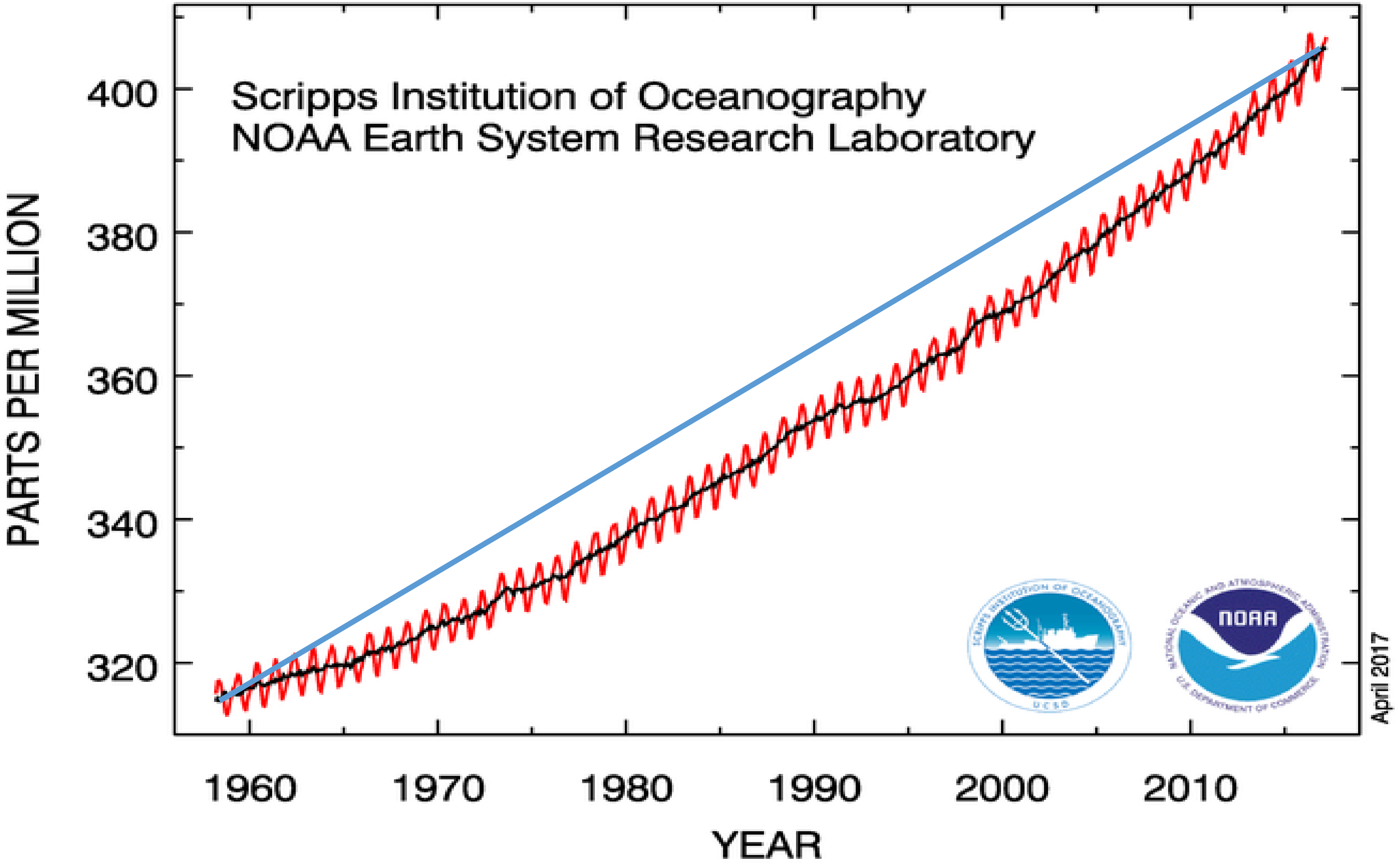
Atmospheric CO_2 at Mauna Loa Observatory



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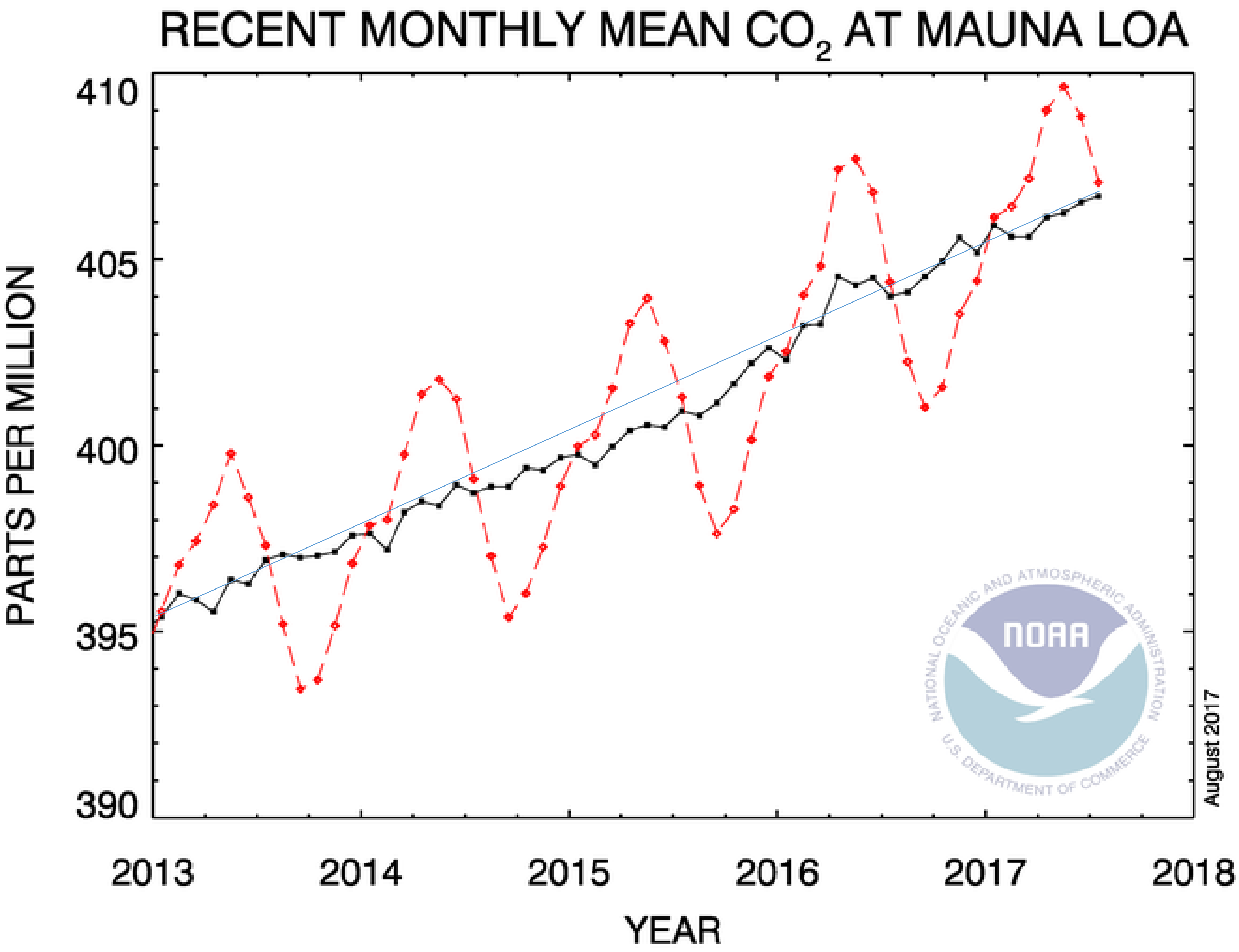

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2. Political philosophy: Central effectiveness vs restrained distributed powers

The state as unified body vs institutions to advance some common interests:

- Plato Republic (380 BC) vs Aristotle in Constitution of Athenians (330-322), constraining central power. Confucius vs Laozi somewhat similar.

Since then:

- Magna Carta discussions, centuries since 1215
- Dutch Republic vs Hobbes Leviathan; Open seas Grotius; Westphalia Peace 1648; Cromwell & James II vs English Glorious Revolution with Bill of Rights 1689; American Republic with Bill of Rights 1789; French Revolution: internal split:
- A. Greatest Happiness for Greatest Numbers (Hutchinson 1725, the later-Bentham against majority rule) ➔ New Welfare Theory (Samuelson/Sen/Stiglitz)
- B. Institutions innovation: Economic growth exploding after WWII

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3. Governance directions diverging

Democratic optimality	**Guiding/incentivizing institutions**
Welfare theory expanding, for practically filled-in democracy from Samuelson to Sen; Rawls; Nussbaum; Stiglitz; Stern	National: Rule of Law, Private Law Central Bank independent + fiscal policy: for stable economic growth ➔ Institutions dominant long term
Environment: quality standards ('450ppm') reached with permits-made-flexible; otherwise standards (buildings, cars); or direct actions-with-subsidies	Correcting external effects, since Pigou: emission tax (but now Baumol-type) Developing adequate electricity markets, as for renewables Revising patent system
International	**International**
World Bank; WTO Doha Round	IMF; GATT/WTO; WHO; ILO; … ("Keynes")
United Nations UNFCCC: Kyoto & Paris	CTC

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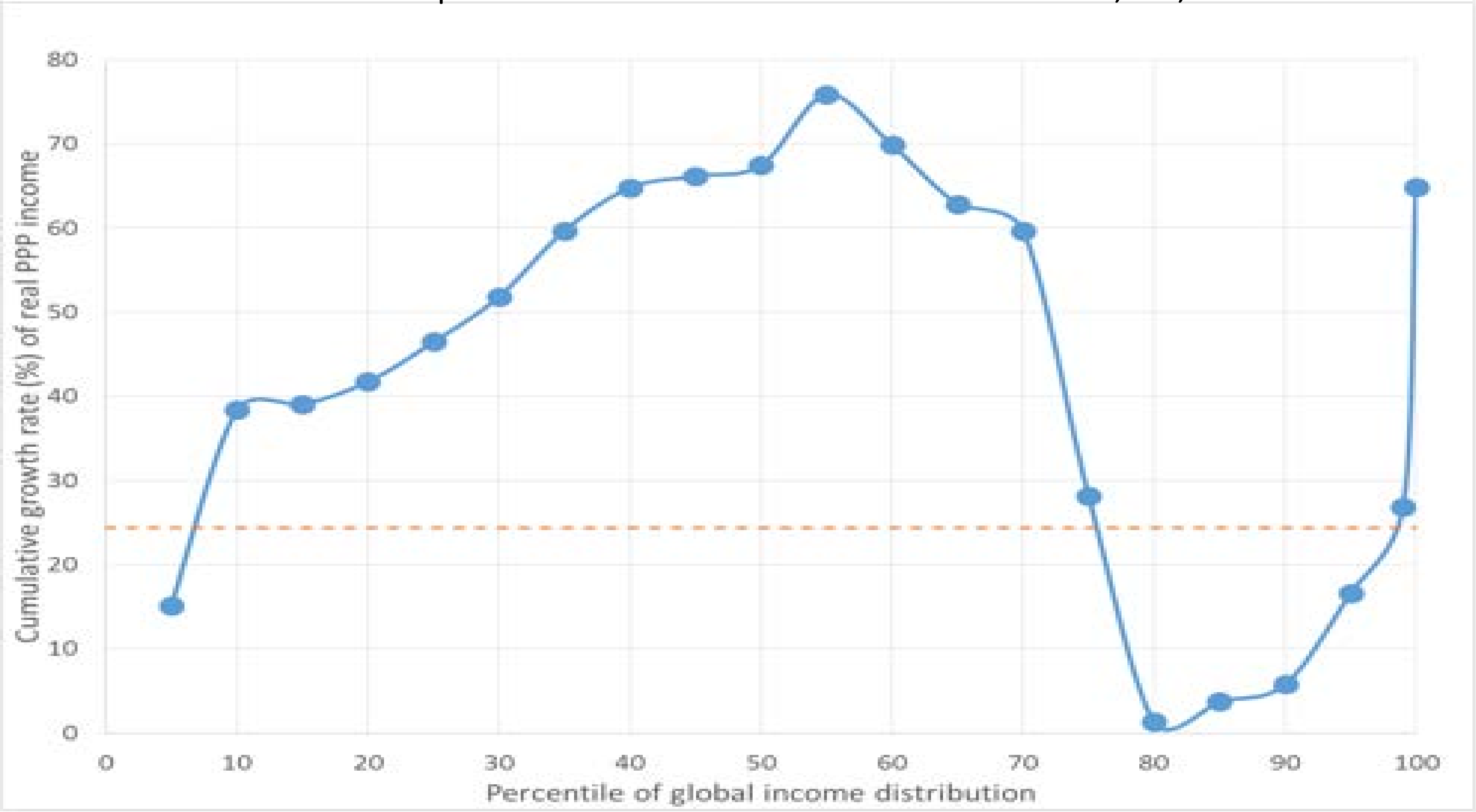
4. Institutional approach dominant long term

Rise in global primary income per percentile, 1982-2008

Lackner & Milanovic *Not* Development Aid and Redistribution but Institutions: WTO, IMF, etc.



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5.a Reasoning towards emission pricing design: CO_2 emission tax as institution for market repair

Political philosophy 1: Planning reasoning towards optimized results

- Setting performance permits per individual emitter to reach the cap goal, if not possible other instruments additionally to reach the target, like standards
  Made flexible by making permits tradable: **cap-and-trade**

Economic welfare reasoning: effectiveness and efficiency, and broader optimality

- Covering all emissions equally, cap-and-trade/taxes; subsidy equivalent; poverty compensations

Political philosophy 2: Institutionalist reasoning, repair new deficiency in social fabric

- Internalization of substantial external effects: Each CO_2 emission under equal tax (**NOT** Coase theorem Option 2)

Economic reasoning: 'roughly effective'

- Avoiding unnecessary cost: slow rise in tax level, rising high enough predictably

Administrative reasoning: sparseness for simplicity

- Have **one** CO_2 pricing instrument only. Other market repairs: **one** electricity market and **one** main entry into reducing monopolistic markets

6.a Encompassing national CO_2 emission tax for Institutionalism

Tax at inflow on:

- C in primary production of fossils from geological resources
- Imports of C in fossils and fossil C contained products

(➔ NOT on upstream emissions on imports)

Refund at outflow on:

- Exports of C in fossil fuels and fossil C contained in products
- Sequestered CO_2, as in geological formations

➔ 'Carbon deposit': not refunded *if lost on the way*

➔ ALL national fossil CO_2 emissions covered

➔ No focus on any specific emitter

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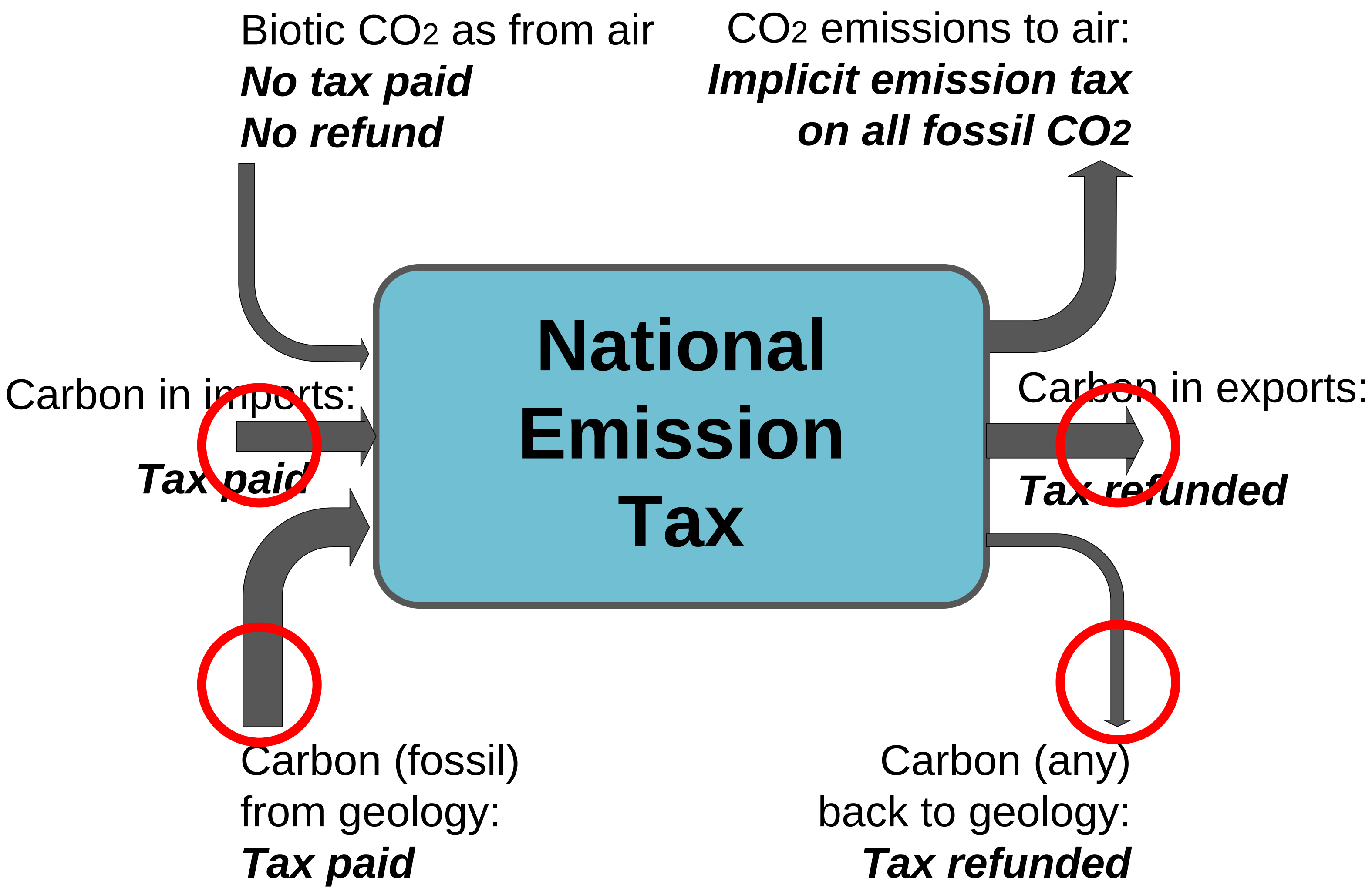
6.b A uniform encompassing national emission tax
➔ System focus: *No focus on any specific emitter*



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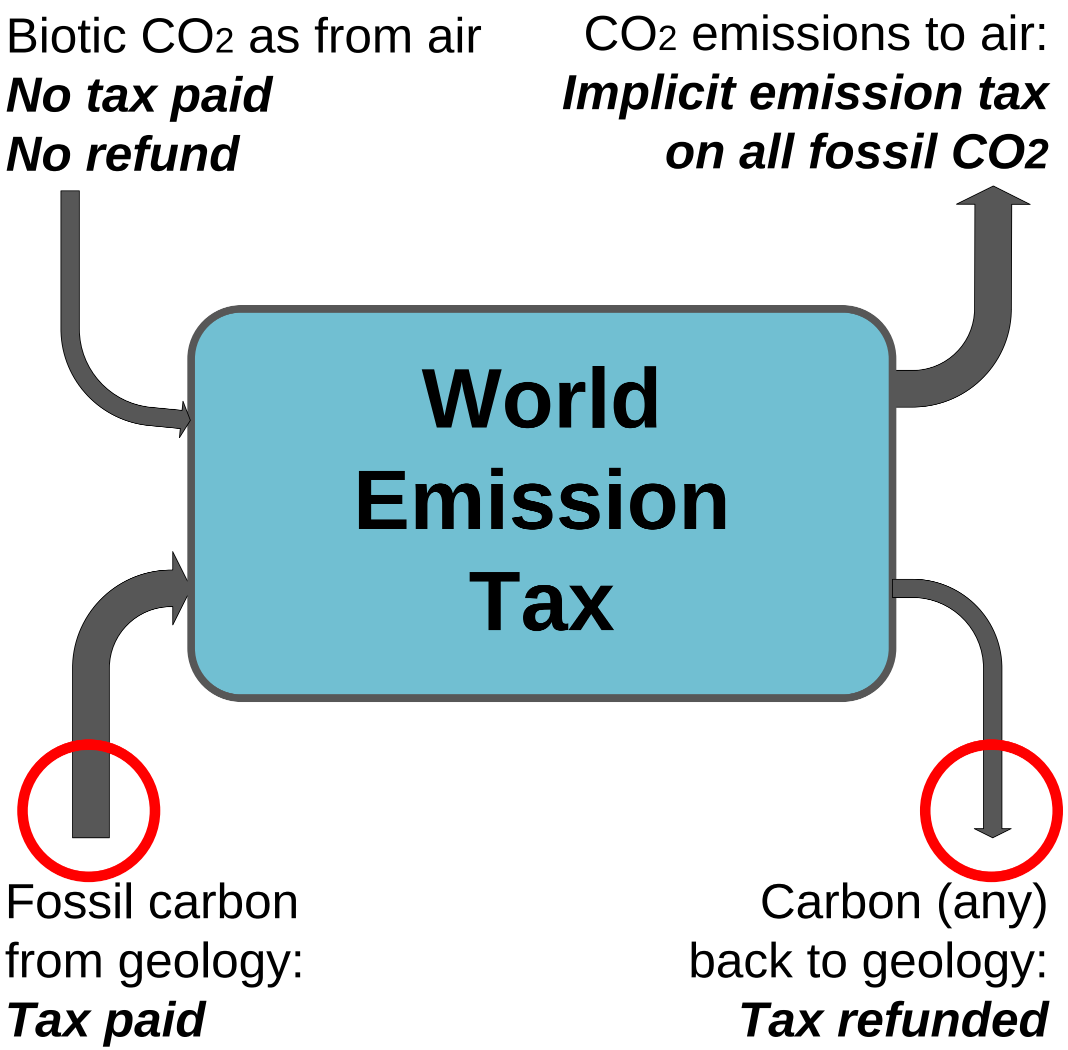
7.a One uniform emission tax world

Simple, but hardly coming globally now



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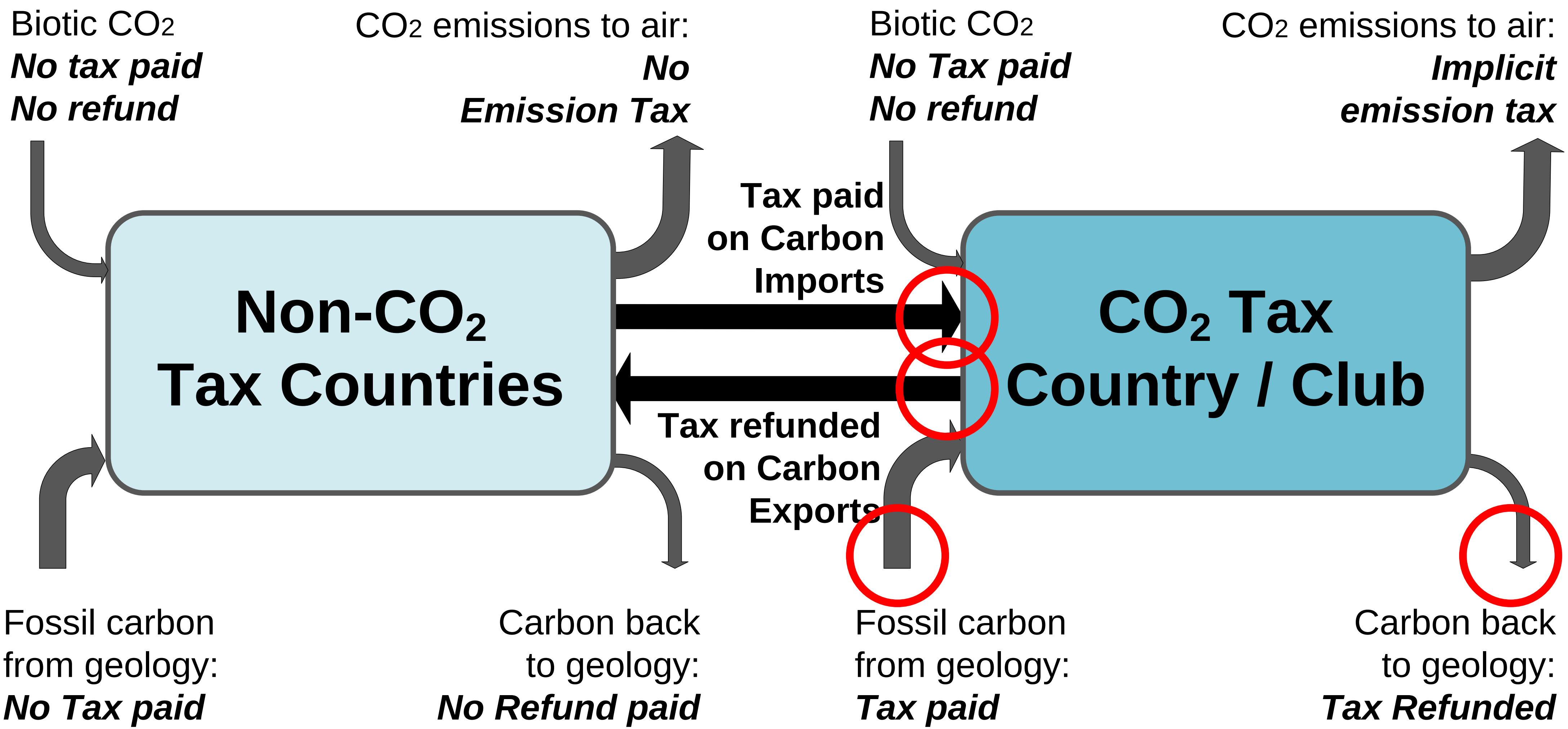
7.b Reckoning with Carbon Imports / Exports

[Tax on imports NOT Border Tax Adjustment but part of national emission tax; no WTO issue]



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7.c International emission tax for *coalition of the willing*: the *Climate Tax Club* (after Nordhaus)

Rules most simple, at start

1. Same set-up and level of national emission tax: up/downstream administered, at start also at mutual borders
2. Common tax treatment of imports and exports with non-Club countries tax
3. Border tax adjustments on non-Club embodied CO_2 emissions? Not by the Club [NOT Nordhaus' generic import tax on non-Club members]

Rules deeper cooperation

1. Same set-up, but covering two (and more) countries as one
2. No tax and refund on trade within the Club; net proceeds according to national share in emissions
3. Club agreement on funding CCS?

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7.d Becoming Club Member: how and why?

- Two countries enough to start the Club, better more.
- Distribution of net proceeds between countries based on their share in total Club emissions, administratively fixed (UNFCCC-type)
- Use of net tax proceeds open to each individual country: Autonomy
- Agreed Club Rules open for others to join.
- Sanctions on non-members with BTA on embodied carbon, if so, NOT including carbon content as done already (especially iron & steel and cement)
- Decision on BTA sanctions made per member country, related to their economic interest, possibly Club coordinated

8. Political perspectives

- **Social-democrats have established emission taxes (several Scandinavian)**
- **Economists like predictably rising emission taxes for effectiveness, the (somewhat neo-)liberal middle of the political spectrum. Politically broad: the UK Price Floor Tax, but in Brexit freedom even better (ha ha)**
- **Conservatives have established emission tax in British Columbia, with later support from more left liberals and expansion to other Canadian provinces**
- **China considers emission tax as administratively simpler than cap-and-trade**
- **Traditional US conservative Republicans like the emission tax as replacing many detailed climate regulations (Baker III, Feldstein et al. 2017), with Ted Halstead, but also leftist Carbon Tax Center**

➔ An IPCC Working Group coming?

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9.a Transforming cap-and-trade and mixed pricing systems

Planning + Economic

- Cap-and-trade (like EU-ETS); where not available an emission tax; where these also not: other measures. After (Liu 2017)

Similar but more **partial**:

- UK Price Floor Tax: tax on difference between cap-and-trade price and predetermined total price (Revenue&Customs 2012 (2010))

Planning + Administrative

- Canada requiring “equivalent pricing in all provinces”, spearheaded by:
- Emission Tax British Columbia (Min-Fin-BC 2014)

9.b Transforming cap-and-trade
➔From cap to tax in four steps

Main example **EU ETS**: Low and instable price, covering around half of CO_2 emissions with arbitrary and changing system boundaries, administratively and politically vulnerable, tax fraud/evasion.

Step 1: Stabilize price to predetermined rising level by active market operations

Step 2/3: "Auction" all emission permits at given price and stop trading, also internationally

Step 3/2: Shift administrative application upstream, to **all** coal, oil and gas produced, and to **all** coal, oil and gas and fossils products imported, covering **all fossil CO_2 emissions**

Step 4: Shift administrative-legally from auctioned permit to customary tax on emissions, like an excise

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