

The effect of carbon pricing on emissions: evidence from an international study

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Question

How effective has carbon pricing been in reducing CO₂ emissions from the energy sector?

Method

Regressions using an international dataset with many controls

Result

A noticeable link between carbon pricing and slower emissions growth rates

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EU emissions trading scheme (ETS)

Launched in 2005

Covers ~45% of EU greenhouse gas emissions

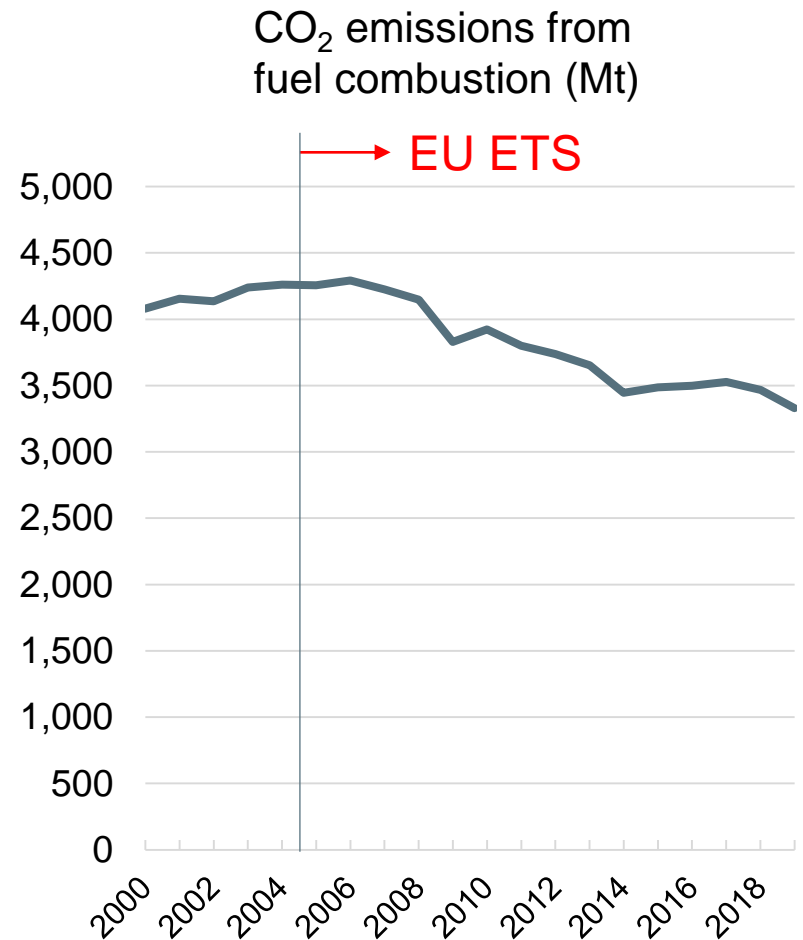
Emissions cap is currently tightened by 1.74% p.a.

In 2021 the annual rate of tightening will increase to 2.2% p.a.

Current permit price = €27/tCO₂

Operates in 31 countries (27 EU countries + UK, Norway, Iceland, Liechtenstein)

EU is considering the introduction of a border tax adjustment mechanism



Source: [BP](#)

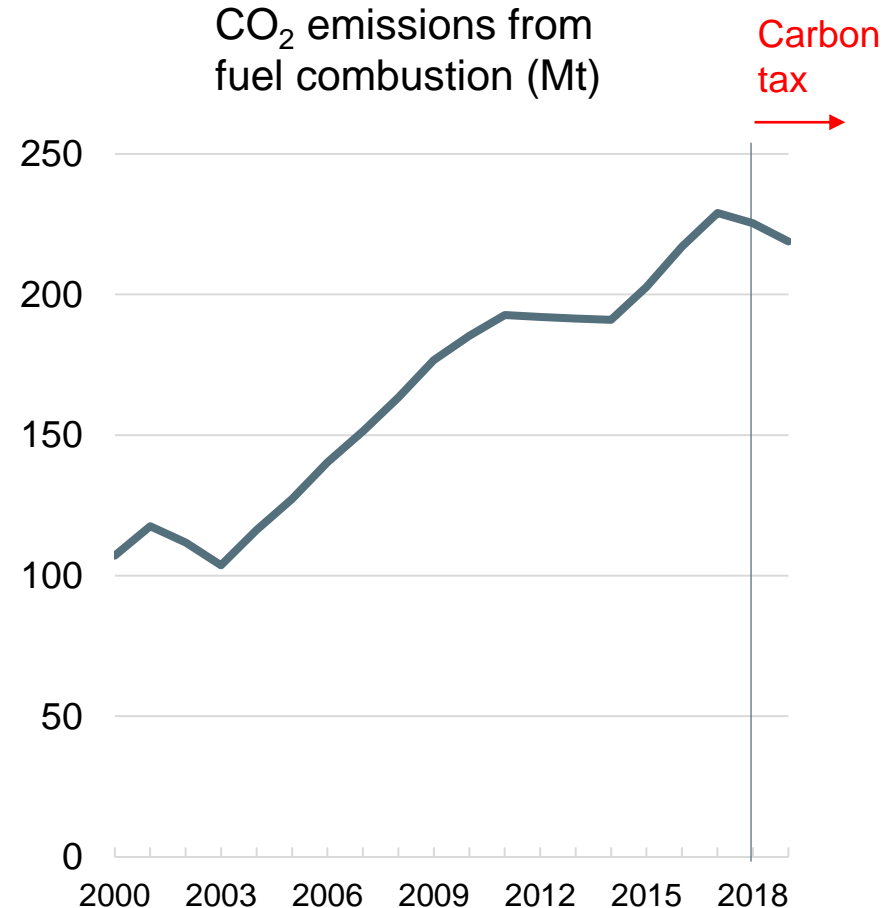
Singapore's carbon tax

Commenced on 1 January 2019 at
S\$5/tCO₂ (US\$3.7/tCO₂)

Covers ~80% of national
greenhouse gas emissions

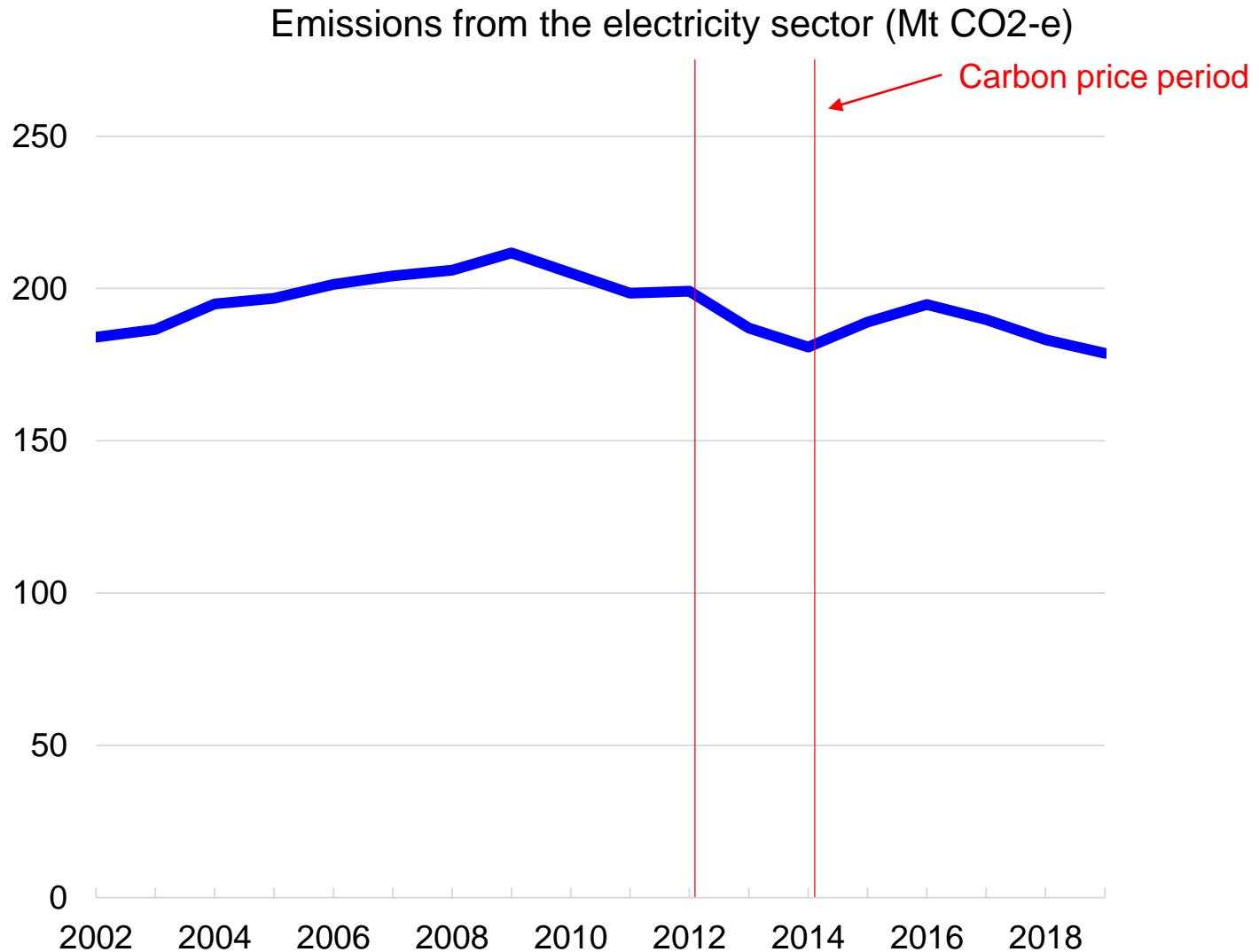
Tax rate is expected to be reviewed
in 2023

Singapore's CO₂ emissions from
fuel combustion fell by 2.8% in 2019



Source: [BP](#)

Australia's carbon price



Opportunities to adopt a carbon price

- 45 countries have some type of carbon price at the national or sub-national level
- China's national ETS is on the way. It will cover ~1,700 emitters in the power sector
- Vietnam is considering an ETS
- A number of other countries are considering carbon pricing
- A carbon tax is the simpler way to go
- Scheme design is highly important. A higher price delivers larger emissions reductions



Vietnam

Australia's emissions reduction policy

- Emissions Reduction Fund
- Safeguard mechanism
- Technology Investment Roadmap

The Technology Investment Roadmap prioritises:

- Clean hydrogen
- Energy storage
- Low carbon steel & aluminium
- Carbon capture and storage
- Soil carbon

However Australia is lacking a strong technology deployment mechanism

Carbon pricing would still be a useful reform



Conclusions

Carbon pricing associated with:

- Faster transitions to clean energy
- Emissions reductions

On average, a country with a carbon price has a 2-pp lower annual emissions growth rate, holding other observable differences constant

Carbon pricing is not the only policy approach to reduce emissions, but appears to be an effective one when used

Looking forward to the discussion

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