

Perspectives on Carbon Pricing in Japan: *Toward Green Growth*

March 2nd, 2021
CEPR-RIETI Symposium

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1. Carbon Pricing at the National Level



Current Carbon Tax in Japan (Tax Rate per CO2 ton)

Tax Revenue
(250 Billion
Yen) is used
for energy
efficiency &
renewable

New Carbon Tax?

Tax for Climate Change Mitigation
(289 Yen per ton of CO2)

Revenue to
promote
battery,
hydrogen or
CCUS?

Since
2012

Crude Oil
Petroleum
Products
(779 Yen)

**New Carbon
Tax?**

LPG, LNG
(400 Yen)

**New
Carbon tax?**

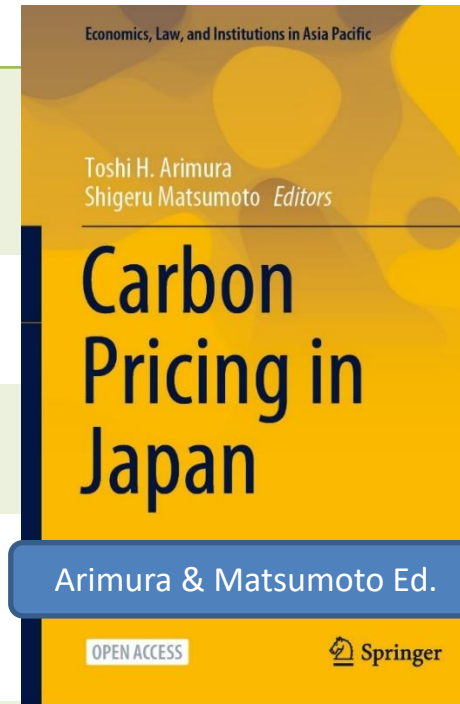
Coal
(301 yen)

**Petroleum
and coal
tax**

Based on the Carbon Pricing Committee under Ministry of the Environment, Japan

Subnational ETSs in Japan

	Tokyo ETS	Saitama ETS
Reduction Target (Phase I)	8% (Commercial), 6% (Manufacturing)	8% (Commercial), 6% (Manufacturing)
Years	2010-2014, 2015-2019, 2020-2023	2011-2014, 2015-2019, 2020-2023
Sector	Manufacturing, Commercial	Manufacturing , Commercial
Number of Facilities	1,300 (Commercial Building : 80%)	600 (Manufacturing Plant : 70%)
Reduction	25% in 2014	22% in 2014
GDP share	18.2% (2014)	4.1% (2014)
GHG emissions (10 thousands t-CO ₂ ; 2014)	6,716 4.9% (% in the total emissions in Japan)	4,250 3.1% (% in the total emissions in Japan)



<https://link.springer.com/book/10.1007/978-981-15-6964-7>

Currently, ETS or carbon tax at the national level are being discussed at METI and MOE

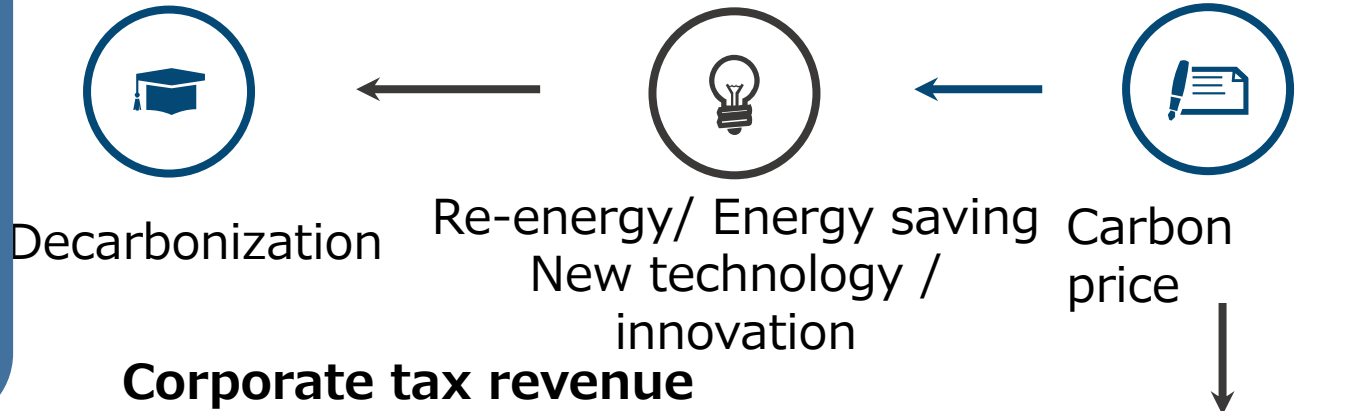
3. Carbon Pricing for Green Growth

Double Dividend of Carbon Tax
(From Takeda and Arimura (2021))

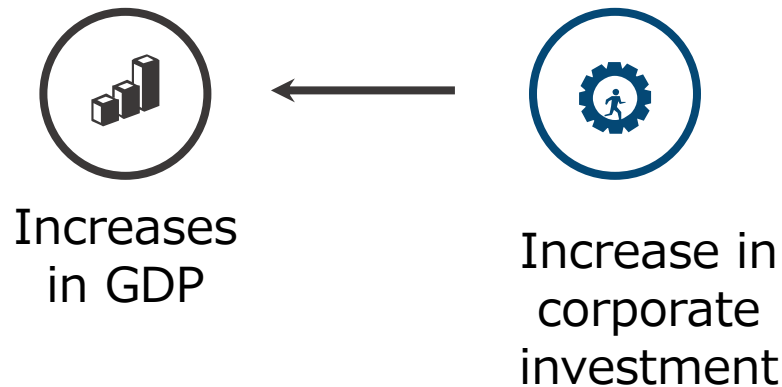


Double dividend of carbon pricing

1
First dividend

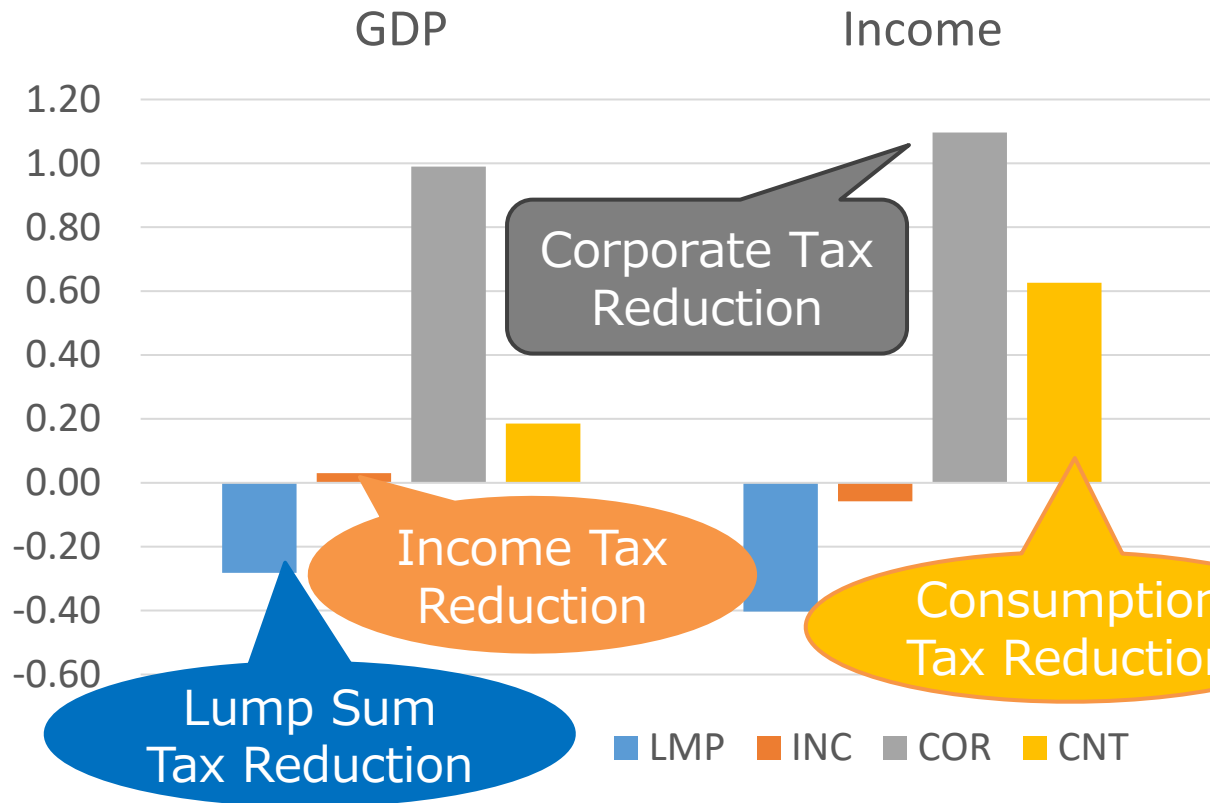


2
Second dividend



Double Dividend of Carbon Tax in 2030 (Takeda & Arimura, 2021)

Macroeconomic impacts (2030)



- **A Dynamic CGE Model**
- **Simulation to achieve 80 % reduction in 2050.**

- In terms of GDP and income, we have a strong double dividend with Corporate Tax Reduction or Consumption Tax Reduction.

4. Carbon Border Adjustment Mechanism (CBAM) for Japan?

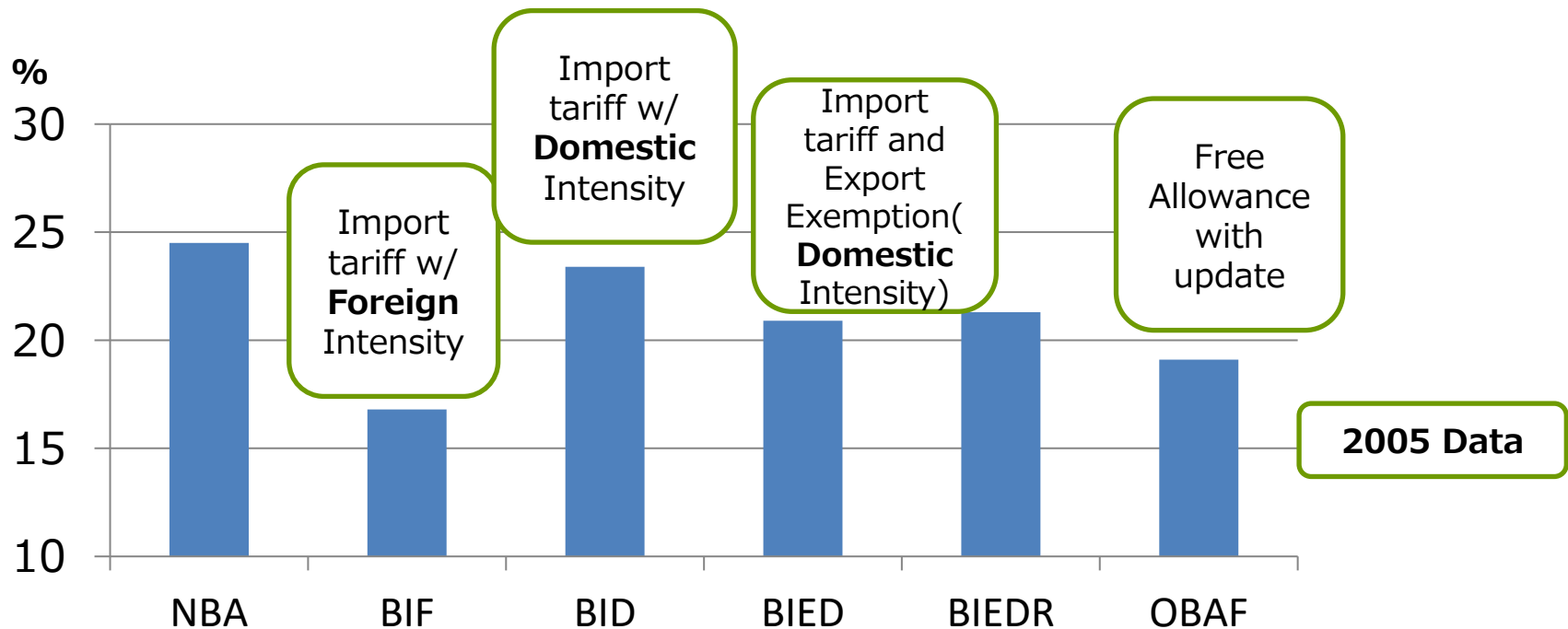
*Countermeasure
for Carbon leakage &
the Competitiveness Issues*



CBAM for Japanese Economy?

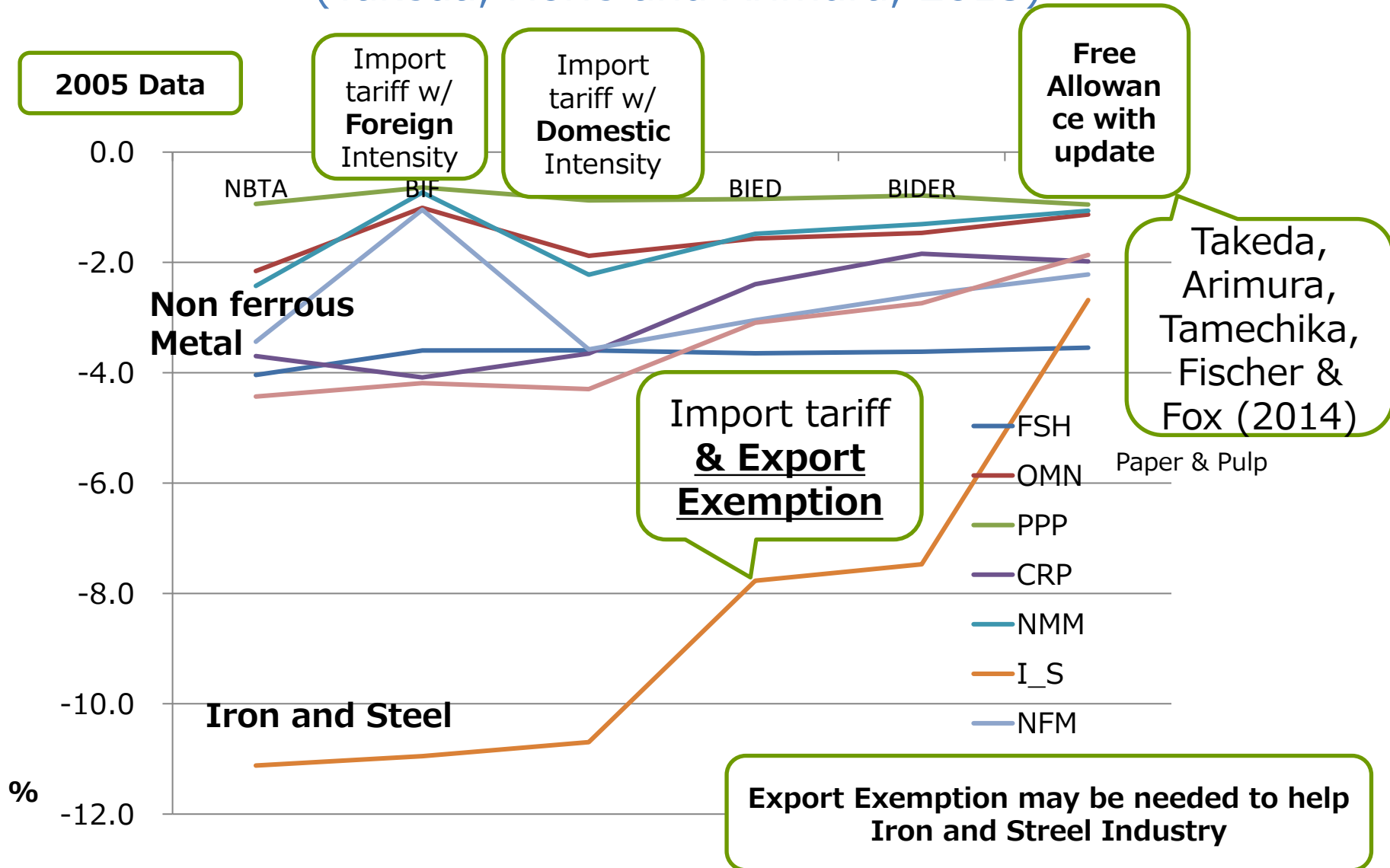
- Design Issue of CBAM
 - Domestic import only?
 - Exemption of Export?
 - How to identify carbon contents of product?
 - Domestic Level
 - Foreign Level
 - Which Sector?
 - Tax or ETS?
- Using 2005 data, Takeda, Horie and Arimura (2013) simulated the various design of CBAM for Japanese economy

Carbon Leakage under various CBAM (Takeda, Horie and Arimura, 2013)



- Among CBAM, one with foreign intensity is the most effective in controlling leakage.
- Free allowance with update is most effective.
- With the domestic carbon intensity, the export exemption is needed.

Impacts of CBAM on Output among Energy Intensive Trade Exposed Sectors (Takeda, Horie and Arimura, 2013)



References

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Thanks!