UNDERSTANDING THE ECONOMIC IMPACTS OF GHG MITIGATION POLICIES ON SHIPPING

What is the state of the art of current modeling approaches?

Shipping webinar || Mon, 25 Feb 2019 || 10-11am EST
THE JOURNEY AHEAD

Pathways for international shipping's CO2 emissions

- **Business As Usual**
- **50% reduction by 2050** (85% reduction in carbon intensity)
- **100% reduction by 2050** if possible

SPEAKING TODAY

Why?

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How?

So what?

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DETERMINANTS OF TRANSPORT COSTS

1. SHIP RUNNING COSTS
2. GEOGRAPHICAL FACTORS
3. SHIPPED PRODUCT
4. MARKET-SPECIFIC FACTORS
5. INFRASTRUCTURE AND SERVICES

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Figure 3.5. Transport and insurance costs of international trade, 2006–2016
(Percentage share of value of imports)

Source: UNCTAD Review of Maritime Transport 2017
Somebody is paying already
1. Ship running costs

This is the cost component where GHG mitigation measures would have immediate impact. Carriers will incur either higher fuel costs or higher capital costs through investment in new technologies or ships. They may also choose to slow-steam, which will reduce expenditures on fuel, but require additional ships on a given loop.
2. Geographical factors
3. Shipped product
4. Market specific factors
5. Infrastructure services
DETERMINANTS OF TRANSPORT COSTS

1. SHIP RUNNING COSTS
2. GEOGRAPHICAL FACTORS
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IDENTIFYING FOUR ECONOMIC IMPACT AREAS

1. Transport costs
   - Increase in ship running costs
   - GHG mitigation measures

2. Transport choices

3. Import prices of goods

4. International trade and economies of states

INTERNATIONAL SHIPPING

INTERNATIONAL TRADE
Small-moderate impact: Carbon price of 10-50 USD/tCO2 may increase maritime transport costs by 0.4-16%.

Source: Rojon et al. (forthcoming 2019)
Limited impact: Doubled maritime transport costs and 65% speed reduction may lead to decrease of sea transport by 0.16% globally.
3) IMPACTS ON IMPORT PRICES

**Mostly marginal impacts:** At a carbon price of 10-50 USD/tCO2, most import prices are expected to increase by less than 1%. 
4) IMPACTS ON TRADE AND ECONOMIES

Modest impacts: A carbon price of 30-90 USD/tCO2 is likely to be limited to a GDP decrease of less than 0.2% for most countries. Some may even see an increase in GDP.
CHOOSING THE RIGHT MODEL

1. Economic (trade) models
2. Transport models
3. Integrated trade & transport models
## UNDERSTANDING THE EFFICACY

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<th>1 Maritime transport costs</th>
<th>2 Transport choices (mode, route, port choice)</th>
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<th>4 International trade flows and economies of States</th>
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### Related impact assessment aspects listed in IMO’s initial Strategy

- 1 Geographic remoteness and connectivity to main markets,
- 2 Cargo value and type,
- 3 Transport dependency,
- 4 Transport costs,
- 5 Food security,
- 6 Risk reduction,
- 7 Cost-effectiveness,
- 8 Socio-economic progress and development

State of the art efficacy

Limited state of the art efficacy
LEVERAGING EXISTING DATA SETS

1. UN Comrade Database
2. OECD Transport Cost Database
3. EUROSTAT
4. Customs Data
5. ECLAC Trade Database
6. UNCTAD LSCI Database
7. UNCTAD Container Port Throughput Data
8. MDS Transmodal Data
THINKING STRATEGICALLY ABOUT IMPACT ASSESSMENTS

Use key findings of studies

Follow best practices for models

Assess in targeted and proportionate manner

Work closely with experts from academia and business
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QUESTIONS & ANSWERS
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