On impact assessments: my 10 cents

(or, 2 cents/minute)

Harilaos N. Psaraftis
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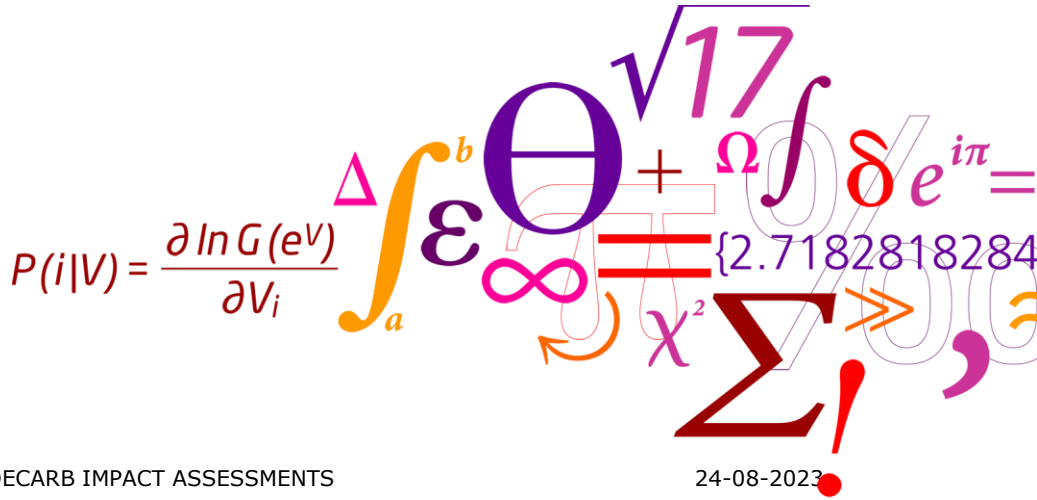

Outline

- DTU's involvement in an IA
- Other IAs and why IAs may yield different results
- Prospects for the "IA-to-be" (as per MEPC80)

BIG QUESTION:
Where was I on 14-12-2020?

- Previous meeting of the group

BIG QUESTION:
Where was I on 14-12-2020?

COVID-19

Before COVID-19

INTERNATIONAL MARITIME ORGANIZATION

E

INTERSESSIONAL MEETING OF THE
WORKING GROUP ON REDUCTION OF
GHG EMISSIONS FROM SHIPS
7th session
Agenda item 2

ISWG-GHG 7/2/20
7 February 2020
ENGLISH ONLY

FURTHER CONSIDERATION OF CONCRETE PROPOSALS TO IMPROVE THE OPERATIONAL ENERGY EFFICIENCY OF EXISTING SHIPS, WITH A VIEW TO DEVELOPING DRAFT AMENDMENTS TO CHAPTER 4 OF MARPOL ANNEX VI AND ASSOCIATED GUIDELINES, AS APPROPRIATE

Detailed impact assessment of the mandatory operational goal-based short-term measure

Submitted by Denmark, France and Germany

DTU Management

IA authors

DETAILED IMPACT ASSESSMENT OF THE MANDATORY OPERATIONAL GOAL-BASED SHORT-TERM MEASURE proposed in doc. ISWG-GHG 7/2/9

Harilaos N. Psaraftis and Thalis Zis
Department of Technology, Management and Economics
Technical University of Denmark

Ronald A. Halim
Equitable Maritime Consulting

DTU Management

Focus

- LDCs/SIDS
- South America
- India

NOTE

- Submission and IA concerned **ONLY the CII component** of the short-term measure
- At the time, EEXI was a **competitor measure** (promoted by Japan and Norway)

- MEPC 75 (fall 2020) decided on a **combined EEXI/SEEMP/CII measure**
- Also decided to conduct a **Comprehensive Impact Assessment (CIA)**, of the combined measure

2 journal papers produced

Int Environ Agreements
https://doi.org/10.1007/s10784-020-09523-2

ORIGINAL PAPER

Check for updates

Impact assessment of a mandatory operational goal-based short-term measure to reduce GHG emissions from ships: the LDC/SIDS case study

Harilaos N. Psaraftis[1] · Thalis Zis[1]

Accepted: 22 December 2020

Focus:
LDCs/SIDS

2 journal papers produced ii

Maritime Economics & Logistics
https://doi.org/10.1057/s41278-021-00194-7

ORIGINAL ARTICLE

Check for updates

Impacts of short-term measures to decarbonize maritime transport on perishable cargoes

Thalis P. V. Zis[1] · Harilaos N. Psaraftis[1]

Accepted: 26 May 2021

FOCUS: South America

Basic results

South America & India

- **Low or no risk** of negative impacts
- **Positive impacts** mainly in the form of reduction of fuel consumption and hence fuel costs and freight rates
- These could translate into a **reduction of CIF prices** of imports or an **increase of FOB prices** of exports, or both

LDCs/SIDS

- **Some risk of negative (and disproportionally negative) impacts** exists

1
2

Fall 2020: UNCTAD's review of all IAs

INTERNATIONAL MARITIME ORGANIZATION

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INTERSESSIONAL MEETING OF THE
WORKING GROUP ON REDUCTION OF
GHG EMISSIONS FROM SHIPS
7th session
Agenda item 2

ISWG-GHG 7/2/36
13 October 2020
ENGLISH ONLY

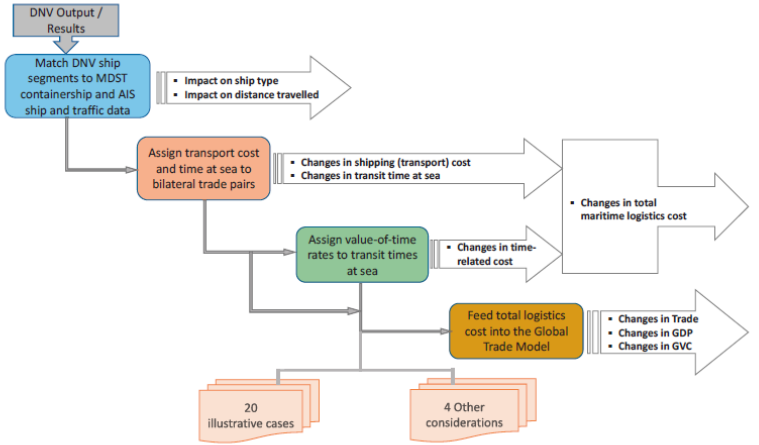
FURTHER CONSIDERATION OF CONCRETE PROPOSALS TO IMPROVE THE OPERATIONAL ENERGY EFFICIENCY OF EXISTING SHIPS, WITH A VIEW TO DEVELOPING DRAFT AMENDMENTS TO CHAPTER 4 OF MARPOL ANNEX VI AND ASSOCIATED GUIDELINES, AS APPROPRIATE

Review of impact assessments by UNCTAD

Note by the Secretariat

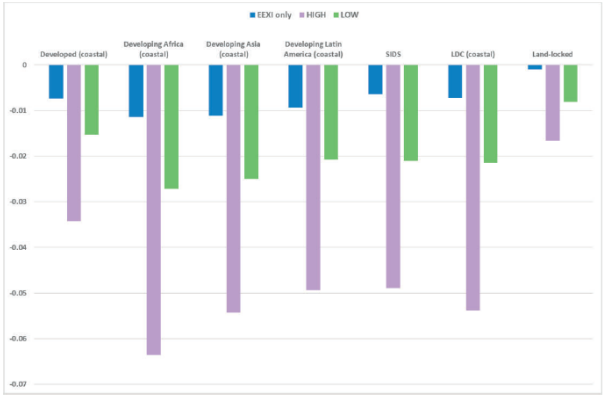
2021: UNCTAD's OWN (C)IA

Figure 1: UNCTAD's methodological approach to Task 3



Source: UNCTAD, 2021.

Figure 10: Simulated percentage change in income (GDP), by country grouping, compared to 2030 baseline scenario



Additional IAs

- **MANY** prior studies in the literature assessing impacts of *carbon pricing* on states
- All proposers of medium term measures submitted their own IAs of these measures and of other measures (eg, of a levy)
- Those who spoke earlier

- Expert workshop in May 2023- comparative assessment of mid-term measures (UNCTAD)

Why IAs results differ?

- Different measures assessed
  - EEXI/SEEMP/CII measure will likely have a different impact from that of a carbon levy, let alone a combined levy/GFS measure
- Differences in input data
  - Can we at least agree on the input?
- Differences in modelling approach
  - Assumptions, method, etc

The CIA-to-be: main challenges

- What is to be assessed? Not well defined
  - Economic measure
  - Technical measure (fuel standard)
  - Offsetting or no offsetting?
  - Imprecise timeline (close to 2050)
  - etc

- How to distribute the revenues

- Highly divergent views on impact & measures

From MEPC80

APPENDIX 1

MEASURES MATRIX

				Economic measure / element [on the basis of maritime GHG pricing mechanism]										
				a	b	c	d	e	f	g	h	i	j	k
				SRUs*	Sustainable Shipping Fund through RUs* for in-sector purposes			GHG pricing on all GHG emissions / Levy						Feebate
Disbursement of any revenues				No revenues generated, but addresses/ reduces price gap and incentivise first movers	Capacity building and negative impact mitigation	RD&D	Admin	RD&D	Reward for eligible fuels	General GHG mitigation and adaptation	Address DNI as appropriate	Equitable transition	Admin	Reward for eligible fuel
Technical measure / element	I	Goal-based fuel Standard	Sustainability [criteria] framework											
	II	Goal-based fuel standard	FCUs and GRUs*											
	III	Goal-based fuel standard												
		[placeholder for another option]												

* Some consider the flexibility element of the goal-based fuel standard to be a part of the technical element, others consider it an economic element

List of abbreviations:

DNI: Disproportionately Negative Impacts.
FCUs: Flexible Compliance Units.
GRUs: GHG Remedial Unit.
RD&D: Research Development and Deployment.
RUs: Remedial Units.
SRUs: Surplus Reward Units.

APPENDIX 2

COMBINATIONS

Combination number	Technical element	Economic elements
1	I	a,b,c,d
2	III	e,f,g,h,i,j
3	II	h,i,j,k
4	II	b,c,d
5	II	e,f,h,i,j
6	II	e,f,g,h,i,j
7	I	a,b,c,d,k

APPENDIX 3

PARAMETERS FOR COMBINATIONS

Parameters for combination 1

TtW GHG intensity pathway of fuel/energy
Sustainability (criteria) framework to identify sustainable fuels/energy
SRUs price: to be determined by market (assumptions could be made)
RUs price, two options: Option 1: Given price before compliance period; or Option 2: 95th percentile of actual SRUs price
Distribution of revenue for b,c,d

Parameters for combination 2

GFI pathway
Level of the levy
Distribution of revenue for e,f,g,h,i,j
Prioritization of revenue use

Parameters for combination 3

Amount of revenue for h,i,j
Feebate method

Parameters for combination 4

GFI pathway
RU price
Distribution of SSF over causes

Parameters for combination 5

GFI pathway
GRU price
Level of the levy
Distribution of revenue for e,f,h,i,j
Prioritization of revenue use

Parameters for combination 6

GFI pathway
GRU price
Level of the levy
Distribution of revenue for e,f,g,h,i,j
Prioritization of revenue use

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THANK YOU

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