Regulating Induced Emissions from Pipeline Projects

Brandon Schaufele

Ivey Business School
Western University
bschaufele@ivey.ca

Measuring the Impacts of Energy Infrastructure
School of Public Policy Event
Chateau Laurier, Ottawa
December 7, 2018

What are “induced” emissions from pipelines?

Definition:

What are “induced” emissions from pipelines?

Definition:

Induced emissions are *additional* emissions that are released into the atmosphere *relative to a counterfactual scenario* where pipeline infrastructure does not exist.

Varcoe: As Canada waits for pipelines, record volumes of oil move by rail

CHRIS VARCOE, CALGARY HERALD Updated: July 31, 2018

Why “induced” emissions matter for pipelines?

- Bill C-69
- Debate over who is responsible for up- *and* downstream emissions?

Enhanced direction in Bill C-69

Factors to consider clause

Section 183(2)

- (a) the environmental effects, including any cumulative environmental effects;
- (j) the extent to which the effects of the pipeline hinder or contribute to the Government of Canada's ability to meet its environmental obligations and its commitments in respect of climate change;

Calls to include non-domestic downstream emissions

Ecojustice (2018)

- “[D]ownstream emissions should be considered in IAs because our fossil fuel exports may well result in greater emissions than those domestically burned”
- CERA should include “lifecycle and lifespan direct, indirect and cumulative effects” on climate change

Pembina (Flanagan and Demerse, 2014)

- "[W]e fully support including [downstream] impacts in all future regulatory considerations ... while many of these impacts would occur outside of Canada’s borders, a broader geographical scope is often appropriate when considering the global environmental challenge of climate change"

Four important points to remember

- Future is uncertain
- Policy can be difficult to change
- Products shipped by pipe yield both benefits and costs
- Benefits and costs are not evenly distributed around the globe

Basic (economic) principles for a regulatory framework

- Aim to minimize *ex post* deadweight loss due to imperfect information
  - Includes market surplus *and* environmental damage
- Keep regulations administratively reasonable
- Maintain consistent treatment across different projects
- Risks should be borne by project proponents
  - To the extent possible

Three rules for regulating induced emissions from pipelines

1. Use a carbon tax
2. Set the rate equal to the global SCC
3. Only regulate domestic emissions

Three rules for regulating induced emissions from pipelines

1. **Use a carbon tax**
2. Set the rate equal to the global SCC
3. Only regulate domestic emissions

Rule 1: Use a carbon tax

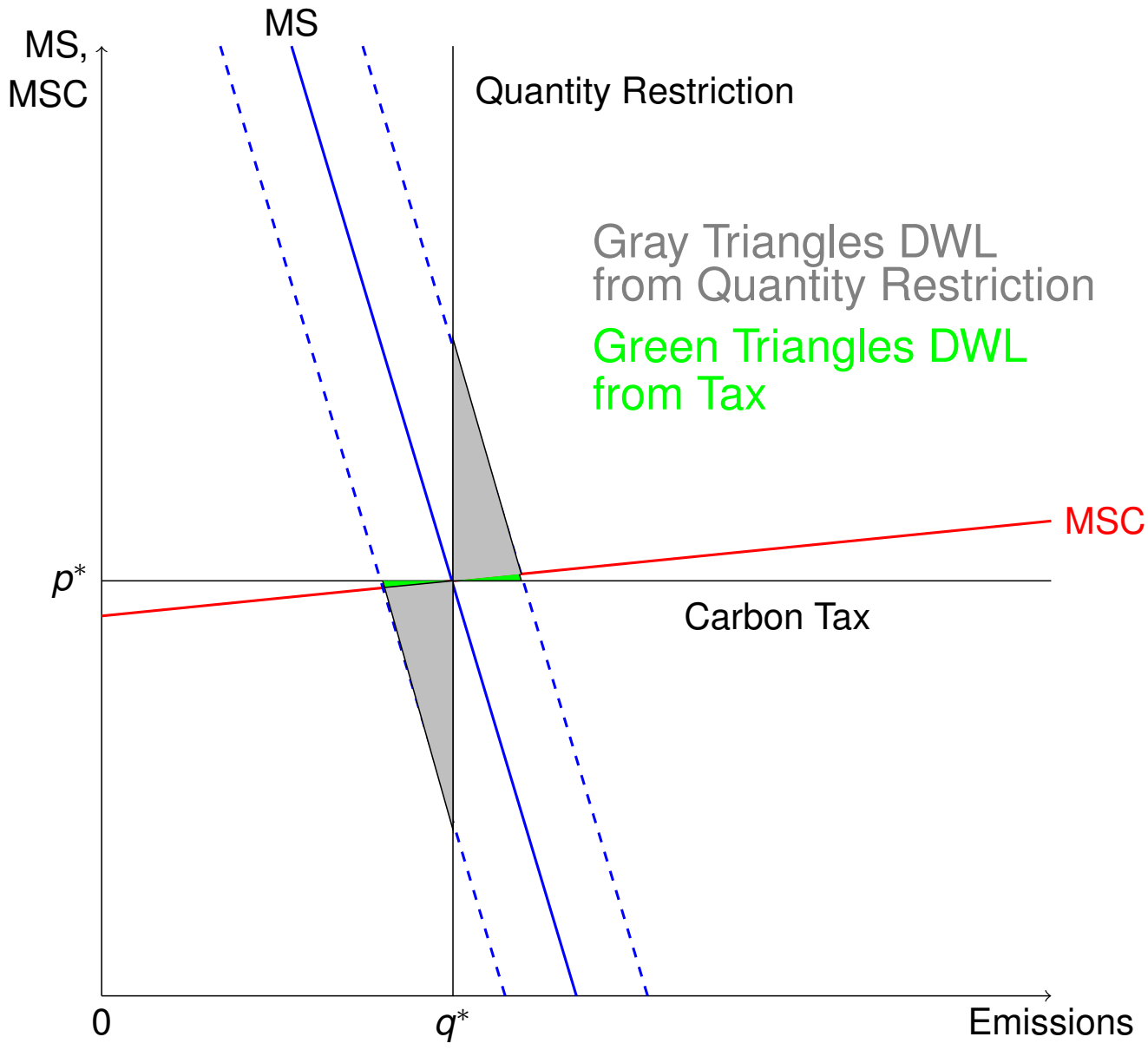
And not other instruments

- CO2 is a long-lived “stock” pollutant
- The future is uncertain
- Policy is hard to change

Implication: Pigouvian taxes are strongly preferred for stock-based externalities

- E.g., Hoel and Karp (2002), Pizer (2002), Newell and Pizer (2003), Fell, MacKenzie and Pizer (2012)

Prices versus quantities (Weitzman, 1974)



Three rules for regulating induced emissions from pipelines

1. Use a carbon tax
2. **Set the rate equal to the global SCC**
3. Only regulate domestic emissions

Rule 2: Use a global social cost of carbon

Social cost of carbon (SCC)

[M]onetized damages associated with an incremental increase in carbon emissions ... intended to include (but is not limited to) changes in net agricultural productivity, human health, property damages from increased flood risk, and the value of ecosystem services.

– Greenstone, Koptis, Wolverton (2011, NBER)

Global versus national social cost of carbon

- Products shipped by pipe yield both benefits and costs
- Benefits and costs are not evenly distributed around the globe
- CO2 is a global pollutant

BUT...

- Canada-only SCC is likley less than the global SCC
- Treasury Board typically suggests focusing on domestic costs and benefits (Heyes, Morgan, Rivers, 2013)

Rule 2: Use a global SCC to set the carbon tax rate

Setting a carbon tax equal to the global SCC means:

- Value placed on the costs and benefits that accrue to non-Canadians
- The “right” value is assigned, given the nature of the externality
  - SCC measures trade-off between costs and benefits from CO2 emissions
- Some benefits from pipelines (and/or pollution abatement) are transferred to foreigners

Three rules for regulating induced emissions from pipelines

1. Use a carbon tax
2. Set the rate equal to the global SCC
3. **Only regulate domestic emissions**

Rule 3: Only regulate domestic emissions

Exclusively regulating domestic emissions means ignoring exported downstream emissions.

- Already factoring RoW by using global SCC
- Avoids double counting if purchasers impose their own carbon price (or use source-based regulation)
- Agrees with UN convention (legal requirement)
  - - "Under United Nations accounting rules, countries are only responsible for emissions that occur within a country's national borders (IPCC, 2006b: 1.4; UNKFCCC, 2006: para.9)" (Purdon and Breton, 2016).
- Over-regulating leads to "excess" leakage and harms purchasers of fossil fuels

Implication and summary

Choose an instrument, choose a rate, choose a base.

Implication: *Given Canada's backstop carbon pricing policy (and its equivalents), induced emissions are already "accounted for" when determining whether to issue a Certificate of Public Convenience and Necessity.*

Implication and summary

Choose an instrument, choose a rate, choose a base.

Implication: *Given Canada's backstop carbon pricing policy (and its equivalents), induced emissions are already "accounted for" when determining whether to issue a Certificate of Public Convenience and Necessity.*

Two-step summary for regulators:

- Appeal to basic principles when designing regulation for induced emissions from pipelines
- Apply three rules:
  1. Use a carbon tax
  2. Set the rate equal to the global SCC
  3. Apply it to all domestic emissions

Thank you.

bschaufele@ivey.ca