Why Carbon Taxation is a Good Idea

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Why is a Carbon Tax Important Now?

The Paris Climate Agreement

- Cost-effective tools are needed to deliver …. by all countries
- Put a price on carbon – strong signal to households and firms
- A carbon tax has low administrative costs vs emission trading
Global Outlook

• How can a carbon tax help drive the sustainable growth necessary to deliver on the Paris Agreement?

• More and more jurisdictions across the globe are introducing a carbon tax
  – Sweden has had a carbon tax since 1991.
  – What lessons can be learned?

• The Road Forward ….
Global Outlook

Why a carbon tax can work well across the globe ….

- **Low administrative costs**
  - is easy to administer, can be added to existing fuel tax system
  - no need to measure actual emissions
  - sets a price on fossil carbon – national conditions determine choices made by households and firms.

- **Taxation point can be chosen up-stream** – few tax payers

- **Start with low tax rates; step-by-step approach**

- **Revenues can be used to**
  - enable options to fossil fuel use (e.g. public transport, substitutes to fossil heating, such as district heating or cooling systems using household waste as a resource)
  - address distributional consequences (e.g. poor households)
Easy to Administer

• In the tax law, carbon tax rates are expressed in normal trade units (weight or volume)
• Legislators use average CO₂ emission factors for different fuels to calculate tax rates
  – Internationally acknowledged emission factors
  – No need to measure at point of emissions to air
• Most countries already apply some kind of duties on fuels. A carbon tax can be paid by the same tax payers (e.g. distributors or large consumers, Sweden: pop. 10 million people, 300 tax payers for energy taxes)
• Low administrative costs for tax authorities and business
  – Administrative costs for Swedish Tax Administration is 0.1 % of total revenues for energy and carbon taxes.
**General principle:** Fuels taxed at the time of production (incl. extraction) or importation.

= Taxation point. Tax payer would typically be a mine owner, an oil driller or importer of oil or other fuels.

**Pros and cons:**

+ Could facilitate tax control
+ Less number of tax payers, easier tax administration

- Negative liquidity effects on business, due to that tax is to be paid before fuels are sold
- Difficult to differentiate tax between refined oil products
- Difficult to differentiate tax between areas of use

1 For discussion; would not be possible in Sweden due to general EU provisions
An Example
Sweden’s 26 years of carbon taxation

New national climate targets, decided by Parliament in 2017

- By 2045 - no net emissions of greenhouse gases.
- By 2030 - emissions from domestic transports (excl. aviation) reduced by 70% compared to 2010
Reasons for Taxing Energy in Sweden

Increased focus on environmental taxes

- **Until 1980’s**: Primarily fiscal purposes
  - generally low tax levels
- **1990’s and onwards**: Environmental issues given high priority by Government and citizens
  - increased focus on environmental taxes
  - increased tax levels, step-by-step
  - focus on increased carbon tax share of taxation of energy ("carbon tax heavy")
- **Now**:
  - Energy tax: fiscal and energy efficiency
  - Carbon tax: climate
Swedish Carbon Pricing

• Carbon tax on motor fuels and heating fuels
  – Based on fossil carbon content of fuels.
  – Introduced along with existing energy tax. Part of major general tax reform.
  – Two levels of carbon tax, per tonne fossil carbon, lower level for industry will be abolished in 2018.

• EU Emission Trading Scheme (EU ETS) since 2005
  – Emissions of fossil CO$_2$ and other greenhouse gases.
  – Large part of heavy industry.

• No carbon tax on industry covered by EU ETS
Development of the Swedish Carbon Tax

**General level and industry level**

<table>
<thead>
<tr>
<th>Year</th>
<th>General Level</th>
<th>Industry Level</th>
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<tbody>
<tr>
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<tr>
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<td>2010</td>
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<tr>
<td>2018</td>
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**NOTE:** from 2008 industry outside EU Emissions Trading Scheme (EU ETS)
Real GDP and Domestic CO$_2$eq Emissions$^1$ in Sweden, 1990–2016

In accordance with Sweden’s National Inventory Report, submitted under the UNFCC and the Kyoto Protocol. CO$_2$ = approx. 80% of total CO$_2$eq emissions. Preliminary data for 2016.

Sources: Swedish Environmental Protection Agency, Statistics Sweden

$^1$ In accordance with Sweden's National Inventory Report, submitted under the UNFCC and the Kyoto Protocol. CO$_2$ = approx. 80% of total CO$_2$eq emissions. Preliminary data for 2016.
Distributional Effects

**Households**

- **Heating fuels:** Fossil heating fuels has been phased out.
  - Fossil heating fuel use has since 1990 dropped by 85% and now represents 2% of Sweden’s total greenhouse gas emissions.
  - Replaced by district heating (in-put basically household waste and wood scrap; 92% of all flats), wood pellets burners and heat pumps
  - Temporary aid schemes for conversion to renewable heating

- **Motor fuels:**
  - Major challenge remains for a fossil free transport sector
  - 95% of current carbon tax revenues from motor fuels
  - Redesigning carbon tax on gasoline and diesel (see my presentation in Parallel Session 3 tomorrow)

- **General welfare state**
  - Social transfers
  - Increased basic income tax reductions for low and middle income households.
Distributional Effects

Business

• **Industry within EU Emission Trading Scheme (ETS):** Generally energy intensive.
  – No carbon tax from 2011, lower energy tax.
  – Proposal to reintroduce carbon tax for heat production in combined heat and power plants covered by the EU ETS on January 1, 2018 at a rate of 11% of the general level.

• **Industry outside EU ETS:** Generally less energy intensive.
  – In general low costs for energy and high costs for labor and capital.

• Large shares of the Swedish industry’s use of energy consist of **bio fuels** (36%, mainly paper and pulp) and **electricity** (32%) in 2014.
  – No tax on solid bio fuels and residues; low energy tax on electricity for industry.
  – Steady decline in specific energy use (amount of energy used per monetary unit of value added).

• **District heating** provides 80% of space heating for service sector (offices, shops etc.)
What Does the Public Think?

• What make households and firms adapt?

*Swedes do not love to pay tax, but ……*

– General environmental concerns, both from households and firms
– Ensure that feasible options are available (bio fuels, district heating, public transport, housing insulation etc.)
– “Polluter Pays” = “Money Talks”
– 26 years of carbon taxation show good environmental effects = pollution from fossil fuels is not essential to economic success.

….. the carbon tax is generally accepted.
The Road Forward .......

• .... yes, a carbon tax is a good idea!
  – reduced emissions can be combined with long-term economic development and prosperity
  – low administrative costs; emission trading schemes more complicated and costly
  – raises revenues, which can be used to make options available
  – step-by-step approach give time for households and firms to adapt
  – involve stakeholders and academia in discussions; cooperation within Government offices
  – Sweden and others can share experiences, but exact design needs to take account of national conditions
How to Make it Happen …..

• We know how to price carbon by a carbon tax
  – Economic theory is solid
  – Ongoing discussions in OECD, Carbon Pricing Leadership Coalition (CPLC), COP conferences, UN Tax Committee, IMF, World Bank, GCET etc etc

• Political courage is needed .... not easy but necessary

• Cooperation between Governments, academia and stakeholders
  – research on policy experience, economical effects on society – as a whole, different groups
  – step-by-step solutions, time limited aid programmes, technical research etc
  – hands-on, practical solutions
If you can dream it, you can do it.

Walt Disney

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Thank you for your attention!
Questions?