Lessons Learned from 25 Years of Carbon Taxation in Sweden

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Side event in the Benelux Pavilion

“Insights and outlook on carbon taxation in the EU non-ETS sectors”
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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
Green Taxes 1991 and Onwards ….

1990/1991 tax reform

- Reduced and simplified labour taxes (- 6 billion $)
- Value Added Tax on energy (+ 1.8 billion $)
- Carbon tax introduced at a low levels combined with approx. 50% cuts in energy tax rates (+ 0.4 billion $)
- Certain investment state aid measures

Since 1991

- 2001-2006 Green tax shift
  - raised environmental taxes, cuts in income taxes focusing on low incomes
- 2007-2013 Increased environmental taxes significant cuts in labour taxes
- 2014 and onwards, for example
  - phasing out carbon tax reductions
  - increased taxes on pesticides and natural gravel as well as energy tax on transport fuels
  - reform of vehicle taxation

In Sweden no earmarking of revenues …. but it may be a solution in other national contexts.
27 Years of Carbon Taxation
Swedish experiences

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

Carbon Tax
- 1988-1989 Committee of inquiry
- 1989 Committee Report
- 1990 Governmental Bill and Parliament Decision
- 1991 Carbon Tax introduced
Swedish Carbon Pricing 1(2)

- **Carbon tax on motor fuels and heating fuels**
  - Based on fossil carbon content of fuels.
  - 28 $ (24 €) in 1991; 133 $ (114 €) in 2019\(^1\).
  - Introduced along with existing energy tax. Part of major general tax reform 1990/91, including reduced energy taxes.
  - Two levels of carbon tax, per tonne fossil carbon, 1991-2017

  - Step-by-step raising the lower level for industry outside EU ETS; lower level fully abolished in 2018.
  - Lower tax level has been the prerequisite for the high level.

\(^1\) Exchange rate from 1 Oct 2018

1 USD = 8,9 SEK
Development of the Swedish Carbon Tax
General level and industry level

NOTE: from 2008 industry outside EU Emissions Trading Scheme (EU ETS)
Swedish Carbon Pricing 2(2)

- 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

- Approximately 95% of Swedish fossil carbon emissions are covered by carbon tax or EU ETS
Real GDP and Domestic CO$_2$eq Emissions$^1$ in Sweden, 1990–2016

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.
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 (input 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
  - Reduction obligation scheme for fuel distributors; taking biofuel share into account when setting carbon tax rates for petrol and diesel

- **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.
  – 1 January 2018 - carbon tax reintroduced for heat production in combined heat and power plants covered by the EU ETS at a rate of 11 % of the general level.

• **Industry outside EU ETS:** Generally less energy intensive.
  – Step-wise increase to general carbon tax level 2011–2018; lower energy tax.
  – 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** (40 %, mainly paper and pulp) and **electricity** (35 %) in 2016.
  – 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 77 % of **space heating for service sector** (e.g. offices, shops).
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; Broad political consensus
– Ensure that feasible options are available (bio fuels, district heating, public transport, housing insulation etc.)
– “Polluter Pays” = “Money Talks”
– 27 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 ……

- reduced emissions can be combined with long-term economic development and prosperity
- low administrative costs; emission trading schemes more complicated and costly
  - leave the choice of measures to households and firms; no Governmental intervention is needed to pick a winner, no applications and evaluations of individual projects are necessary
- raises revenues, which can be used to make options available
  - fine-tune policy design – what works in one country may not work well in another
  - carbon tax is the engine – additional measures are lubricants that make the engine go faster
- step-by-step approach gives time for households and firms to adapt – consider limited tax exemptions or reductions for certain areas to achieve over-all good results in economy
- discuss with stake holders and academia; cooperate within Government offices

…. yes, a carbon tax is a good idea!
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More information on the Swedish carbon tax:
http://www.government.se/carbontax