



Lessons Learned from 25 Years of Carbon Taxation in Sweden

COP24 Katowice, Poland

Side event in the Benelux Pavilion

“Insights and outlook on carbon taxation in the EU non-ETS sectors”

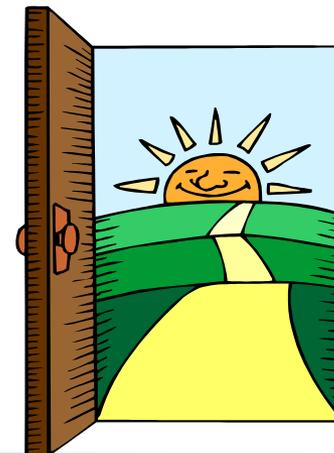
13 December 2018



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

In Sweden no earmarking of revenues but it may be a solution in other national contexts.

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



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)

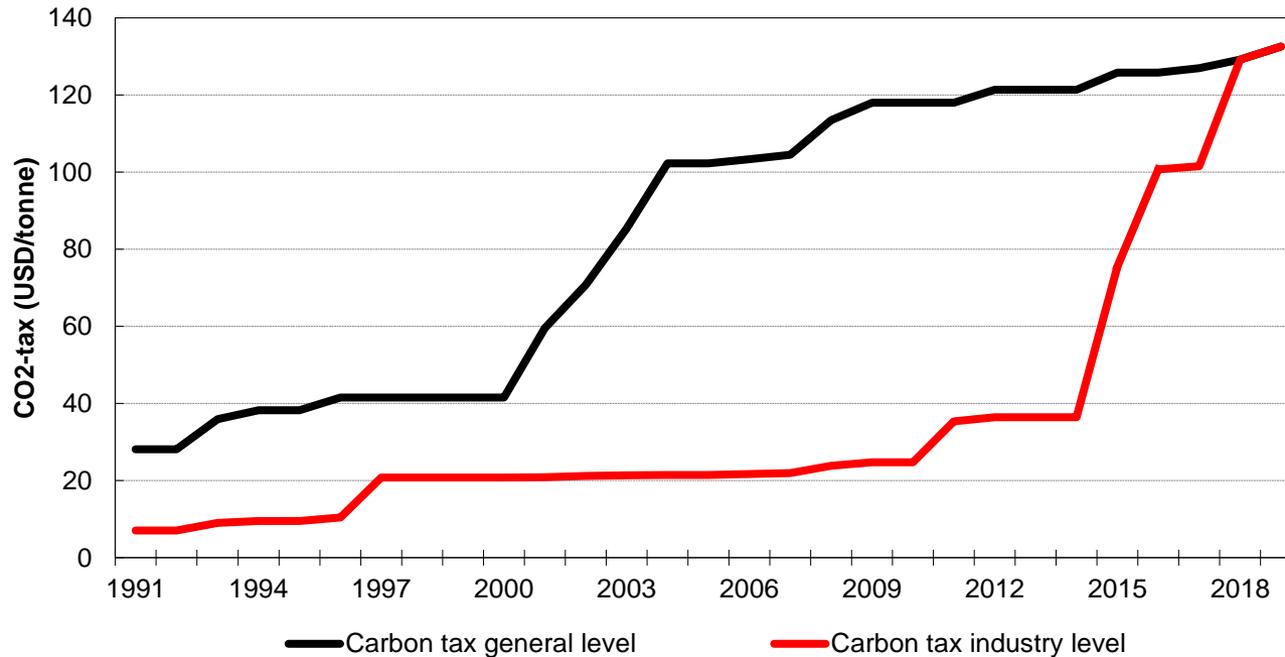
- **Carbon tax on motor fuels and heating fuels**
 - Based on fossil carbon content of fuels.
 - 28 \$ (24 €) in 1991; 133 \$ (114 €) in 2019¹.
 - Introduced along with existing energy tax.
Part of major general tax reform 1990/91, including reduced energy taxes.
 - Two levels of carbon tax, per tonne fossil carbon, 1991-2017
 - *High* for motor fuels and heating fuels in households and service. *Low* for heating fuels in industry 1991-2017: 7 \$ (6 €) in 1991; in 2017 outside EU Emission Trading Scheme (EU ETS) 102 \$ (88 €),
 - 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

Carbon tax levels
USD per tonne

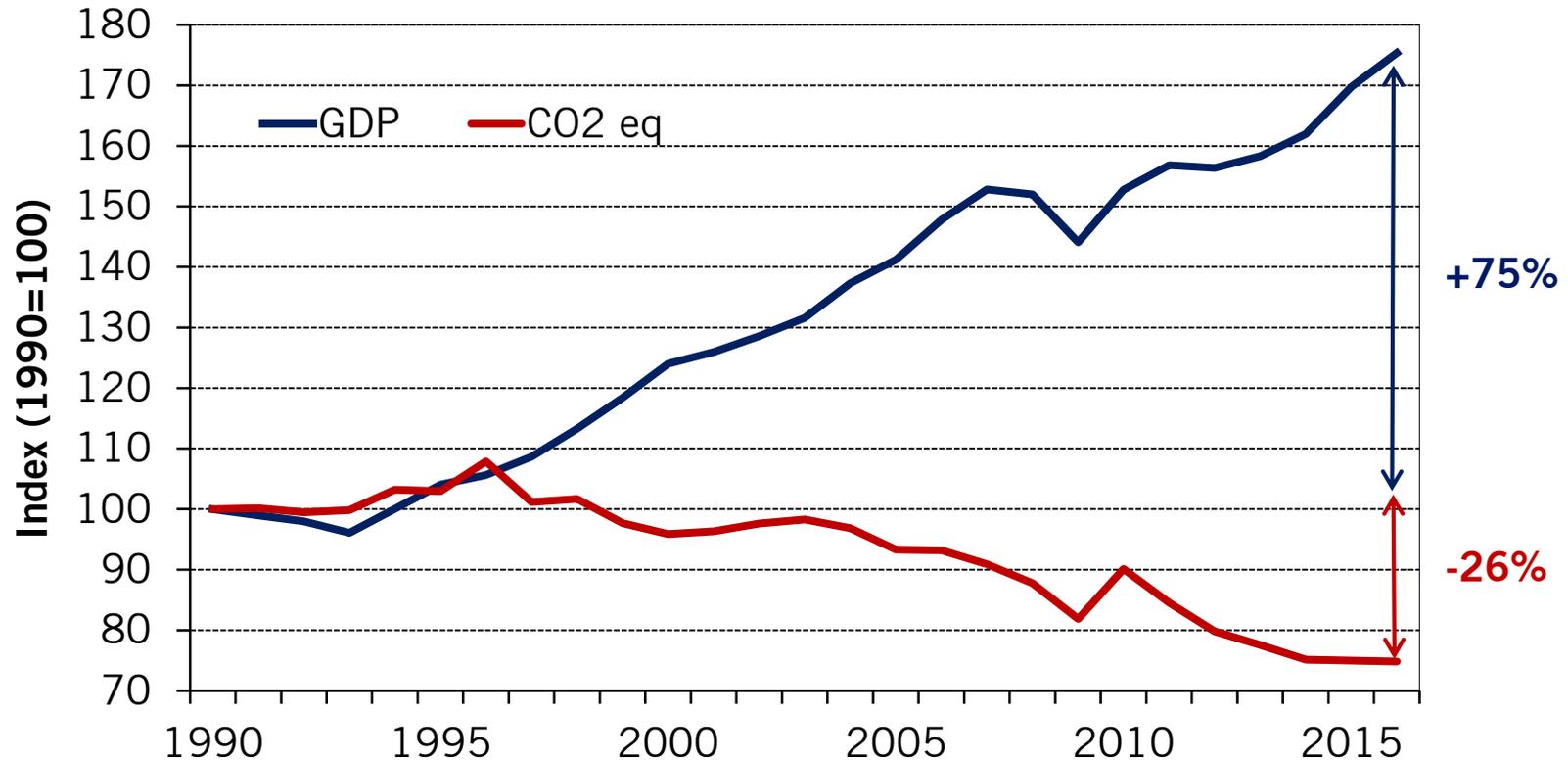


NOTE: from 2008 industry outside EU Emissions Trading Scheme (EU ETS)

Swedish Carbon Pricing 2(2)

- **EU Emission Trading Scheme (EU ETS) since 2005**
 - Emissions of fossil CO₂ 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 CO₂eq Emissions¹ in Sweden, 1990–2016



¹ In accordance with Sweden's National Inventory Report, submitted under the UNFCCC and the Kyoto Protocol. CO₂ = approx. 80 % of total CO₂eq emissions.

Sources: Swedish Environmental Protection Agency, Statistics Sweden



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
 - 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>