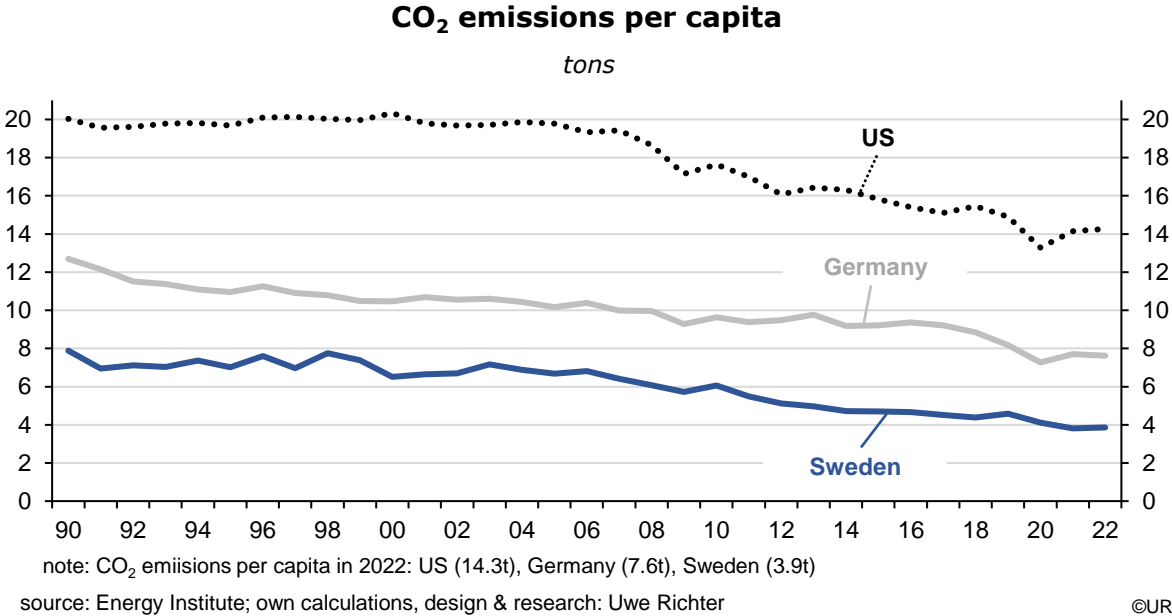


# Sweden, the ecological wunderland

Armissan, July 13, 2023 | Dieter Wermuth

Few analysts had thought that it was possible: the Swedes did it – to reduce CO<sub>2</sub> emissions year after year and to significantly expand real GDP, as a proxy for the general wellbeing. On a per capita basis, emissions are presently just half as large as Germany’s, and only 28 percent of US emissions. Since 1990 they have been reduced by one half while real GDP per inhabitant has been up 61 percent. Only the Scandinavian neighbors and Switzerland have achieved such an impressive combination. Climate mitigation and economic growth are simultaneously possible. By extension, may it actually be feasible that structural change towards an emissions-free economy may not only be growth-neutral but growth-accelerating? Because it pays to be an early adopter, to be ahead of other countries and gain competitiveness in climate products and services?



In a large empirical analysis two economists, from MIT and Harvard (Metcalf and Stock: [The Macroeconomic Impact of Europe’s Carbon Taxes](#)) have come to the conclusion that European CO<sub>2</sub> taxes did not have any negative effect on growth and employment, and that in the long run those taxes did not reduce potential GDP growth and employment. Changes of relative prices, for instance as a result of new and rising carbon taxes, play no role compared to technical progress and other fundamental determinants. On the other hand,

the authors have not found evidence that the introduction of carbon taxes is growth-enhancing.

### Sweden compared to the US and Germany

	real GDP per capita		labor force participation rate of women*)	annual working time**) hours	nom. GDP per capita***) euro
	1999-2023	2013-2023			
	∅ % p.a.	∅ % p.a.	%		
Sweden	1.4	1.2	81.3	1,595	49,713 <sup>a)</sup>
Germany	1.0	0.7	75.4	1,341	47,359
US	1.2	1.5	69.0	1,683	72,361 <sup>b)</sup>

\*) 2022 – \*\*) 2022, per person employed – \*\*\*) 1st quarter 2023, annualized – a) translated at 11.8745 SEK/EUR – b) translated at 1.0956 USD/EUR

sources: OECD, Eurostat, AMECO, own calculations

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Sweden had introduced a carbon tax in 1991, at about the same time as Finland, Norway and Denmark. It is based on the principle that polluters have to pay for the environmental damage they cause. It increases the incentive to save energy, to improve energy efficiency and to develop alternative, non-fossil fuel sources of energy. Over time, the tax was continuously changed and, most importantly, ambitiously increased. The tax was seen as a compliment to the existing energy tax and is levied in proportion to the carbon content of the various fossil fuels. At the start it was at 250 kronor per ton of CO<sub>2</sub> emitted; it is now at 1,330 kronor. Using an exchange rate of 10.87 kronor per euro, it has gone up from 25 to 122 euros, almost by a factor of five, and is by now one of the more important sources of government revenues. Since the rate hiking process has been steady and predictable, households and businesses had enough time to adjust their spending, saving and investment models. It has also been good for the political acceptance of this kind of climate policy. As an aside, it is worth mentioning that the ETS price for one ton of CO<sub>2</sub> emissions had passed the 100 euro mark for the first time in February 2023 – it is in the neighborhood of Sweden's carbon tax.

In the beginning, those segments of industry which were not covered by the European emissions trading system ETS had to pay only a very low tax. The government, under pressure from industrial lobbying groups, was concerned about international price competitiveness and jobs. Since 2018 such firms pay the same tax rate as everyone else – a special treatment was no longer necessary.

As an indirect tax, the carbon tax has regressive effects on household incomes, just as the value-added tax: in relative terms, low-income households pay a higher tax than those with a higher income. This was the main reason why the carbon tax was an important part of the comprehensive tax reform package of the early nineties. By lowering the income tax burden on the poorer parts of the population the Swedish government successfully avoided social conflicts. There is, incidentally, no “climate dividend” in Sweden, but the general government budget is used to counterbalance undesirable income distribution effects of the carbon tax and other climate policies.

The various Swedish governments have always, and especially in the early years, emphasized that the financial burden of climate mitigation should not be carried by the little guy and that social justice must always be maintained. This is an important lesson that can be drawn from the Swedish experience. Governments which consider introducing a carbon tax must never underestimate the importance of social side effects.

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