Climate impact of tax reliefs in Switzerland

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Study proves climate-damaging effect of tax reliefs

Tax law provides for deductions and exemptions for various reasons. If these do not comply with the principles of comprehensive taxation based on capacity to pay, they are referred to as tax reliefs. A study by EPFL and the University of Lausanne has analysed the most important tax reliefs at federal and cantonal level in terms of their potential impact on the climate. It concludes **that the abolition of climate-impacting tax reliefs would reduce CO_2 emissions by a total of 2.5 million tonnes per year**. Of these, 1 million tonnes are included in the national emissions inventory of 42 million tonnes in 2022. The savings would therefore account for 2.4 % of these emissions. **At the same time, CHF 4.6 billion in additional tax revenue would be generated, most of which – CHF 2.9 billion – would go to the federal government**.

The study therefore makes an important contribution to both climate policy and the current debate on combating structural deficits in the federal budget. When deciding to change, reduce or abolish a tax relief, there are of course other aspects to consider. Tax reliefs generally serve a specific purpose, and changing them can have a range of economic and social effects. It is the task of politicians to weigh up these factors.

Strong climate effects in international air traffic

International air traffic benefits from tax reliefs with a strong impact on the climate, as it is exempt from mineral oil tax and VAT. Abolishing these tax reliefs would reduce CO_2 emissions by almost 1.5 million tonnes per year and generate additional tax revenue of CHF 1.4 billion.

International air traffic is exempt from mineral oil tax and VAT because the international community, led by the USA, wanted to support a young, expensive and inefficient industry in 1944. These initial support measures turned into a mesh of permanent international treaties. The abolition of these privileges would lead to an increase in ticket prices of around 40 % and a decrease in air traffic of around 30 %. Of the tax reliefs analysed, they would generate the second-highest additional revenue for the federal government and the greatest reduction in CO_2 emissions. As the overall climate impact of kerosene combustion at high altitudes is estimated to be three times higher than the release of the same amount of CO_2 at ground level, the abolition of these privileges would be equivalent to avoiding more than 4 million tonnes of CO_2 emissions at ground level.

Tax reliefs for professional mobility by car

In the area of occupational mobility, tax reliefs for commuting by car, company cars and free parking have a detrimental effect on the climate. The analysis shows that these tax reliefs influence user behaviour and thus lead to an increase in CO_2 emissions. **Completely abolishing the commuter deduction and tax reliefs for company cars and parking spaces at the place of work would reduce CO_2 emissions by over 600 000 tonnes and generate additional income tax revenue of over CHF 2 billion**.

The various cantonal and federal commuter deductions result in an average subsidy of 15 cents per kilometre for the average taxpayer, which is slightly more than the average commuter's fuel costs. The deductibility is therefore equivalent to the public sector covering the average commuter's fuel costs. As it is controversial to what extent such travel costs should be deductible, i.e., to what extent the current federal and cantonal regulations amount to a subsidisation of commuting by car, three options were examined (Table 1 at the end of this policy brief): (1) complete cancellation of the deduction; (2) capping at the level of the upper limit for direct federal tax (currently CHF 3 200); (3) capping at the cost of commuting with the "best in class", i.e., the cheapest car (50 cents/km). Each variant would lead to a reduction in commuter traffic and CO_2 emissions. The greatest reduction would be achieved if the commuter deduction were completely abolished.

Taxpayers who are allowed to use a company car free of charge for their private mobility are deemed to have income in kind. This generally underestimates the value of private use, which encourages the choice of car for mobility and high mileage. The same applies to free or subsidised parking spaces at the workplace, which are not included in taxable income as a fringe benefit.

Road freight transport is only partially taxed

In the case of heavy goods vehicles, the external costs are not fully compensated by the performance-related heavy vehicle fee (HVF). Light commercial vehicles are even completely exempt from the HVF. These tax reliefs increase demand, which leads to significantly higher CO_2 emissions. **If heavy goods traffic had to cover its non-climate-related external costs in full, its CO_2 emissions would fall by over 100 000 tonnes and the HVF would generate half a billion francs more. If light commercial vehicles also had to cover their non-climate-related external costs, this would reduce CO_2 emissions by another 100 000 tonnes and generate more than half a billion Swiss francs.**

The HVF was introduced in January 2001 with the aim of charging heavy goods vehicles for costs that they would not otherwise bear. Specifically, the additional infrastructure costs, climate impact and other external costs such as air pollution and noise. We do not take climate impact into account in our analysis, as it should be dealt with in the context of climate policy. With the current HVF rates, heavy goods traffic only covers 66 % of the remaining costs, which is partly due to the cap on transit costs for EU trucks in the overland transport agreement. We consider the uncovered portion – CHF 525 million in 2019 – to be a tax relief. Full internalisation would lead to additional revenue of CHF 500 million, taking into account that heavy goods traffic would decrease by around 6 %. This reduction in traffic and fuel consumption would lead to a corresponding reduction in CO_2 emissions.

Light commercial vehicles do not pay the HVF, although they also cause non-climate-related external costs, which they do not cover. To correct this, a fee would be necessary. Either one that covers 66 % of these costs, like the current HVF for heavy goods vehicles, or 100 %. Depending on the variant, the additional revenue and the CO_2 emissions saved will of course vary.

Other tax reliefs analysed

The reimbursement of mineral oil tax to licensed transport companies leads to additional emissions. If this were replaced by a subsidy to decarbonise the vehicle fleet, between 120 and 155 thousand tonnes of CO_2 could be saved, depending on the design of the new subsidy.

Tax reliefs for homeowners are also suspected of leading to higher CO_2 emissions. Especially if it is assumed that they encourage larger flats and houses. In reality, however, **they mainly lead to windfall effects and high revenue losses, but not to a significant increase in CO_2 emissions**.

Owner-occupiers, i.e., taxpayers who own the residential unit they live in, enjoy considerable privileges compared to the tax norm. The norm is that the rental income that they could earn by renting out their property should be added in full to their taxable income, as implicit income from their wealth. Furthermore, only maintenance and repair costs actually paid should be deductible. Finally, the market value of the property should be added in full to the taxable assets. These principles are far from being realised in practice.

The study shows that the current tax reliefs hardly increase the number of homeowners. In most cases, they are not a decisive reason for buying a home, but merely a welcome windfall. More importantly, these tax reliefs lead to higher property prices, making home ownership unaffordable for many people with low wealth, despite the improvement in income from the tax reliefs. We estimate that the tax reliefs will only result in around 300 more households buying homes each year.

There is little quantitative evidence of higher greenhouse gas emissions from homeowners compared to renters when all other factors (e.g., the income level) are taken into account. There is only some evidence of 10 % higher grey emissions in their housing units compared to rented housing. This and the small increase in the number of owner-occupiers means that the subsidies for owner-occupiers are only responsible for around 50 tonnes of additional CO_2 emissions per year.

Methodological approach

The main report identifies federal tax reliefs and– subsidiary– cantonal tax reliefs that indirectly cause large quantities of greenhouse gas emissions. The extent of these additional emissions and the costs for public budgets were estimated.

No direct subsidies with a significant impact on the climate were found. Subsidies and tax reliefs related to climate or energy policy were not analysed as they are regularly evaluated in the context of these policies. Instead, the report focusses on tax incentives that are not a priori considered to have a significant impact on the climate. In this sense, the report could help the authorities to fulfil the mandate of Article 12 of the Climate and Innovation Act: "Provisions of other federal decrees and cantonal decrees, in particular in the areas of CO_2, the environment, energy, spatial planning, finance, agriculture, forestry and timber industry, road and air transport and mineral oil taxation, shall be designed and applied in such a way that they contribute to achieving the objectives of this Act." (our translation)

The study was conducted in several steps. In a first step, tax reliefs with potentially significant climate-damaging side effects were identified on the basis of existing literature. Subsequently, it was checked whether these were actually tax reliefs, as not every tax deduction or tax exemption violates tax doctrine. The next step was to estimate the extent of the tax reliefs and the resulting budgetary costs.

Tax reliefs have a detrimental effect on the climate if they influence decisions and behaviour in such a way that more greenhouse gases are emitted. It was therefore determined how and to what extent tax reliefs influence decisions and behaviour. The additional emissions of CO_2 or other greenhouse gases attributable to this influence were then calculated.

In general, when analysing the results, it should be borne in mind that this study was conducted with very limited resources and very restricted access to data. **It is therefore strongly recommended that the analysis of the identified tax reliefs with potentially particularly large climate-relevant side effects be analysed in greater depth with the help of (tax) authorities that have access to extensive primary data**.

Tables

The following table summarises the results of the report. The subsidy amount is the amount of tax that beneficiaries save as a result of the tax relief. Since the abolition of tax reliefs can influence behaviour, it can affect the tax base and thus lead to potential tax revenues that differ from the subsidy amount. If this dynamic effect does not exist or is negligible, the same amount is given for both approaches. The climate impact corresponds to the reduction in greenhouse gas emissions if the tax relief were to be changed or abolished.

Table 1: Budget costs and climate effects of the tax reliefs analysed

Tax relief	**Subsidy amount** (million CHF)	**Potential tax revenue** (million CHF)	**Climate impact** (thousand tonnes of CO_2)
Mineral oil tax and VAT: exemption of international air traffic	1 890	1 360	1 450
Income tax: Commuter deduction			
• Complete abolition	1 705	1 705	430
• Upper limit of CHF 3 000	385	385	95
• "Best in class" deduction	370	410	130
Income tax: company cars and free parking spaces at the workplace			
• Company cars	100	100	120
• Free parking spaces	330	330	75
Heavy goods vehicle fee: uncompensated non-climate-related external costs	525	500	115
Heavy goods vehicle fee: Exemption for light commercial vehicles			
• Partial compensation of external costs, like heavy vehicles	405	375	95
• Full compensation of external costs	615	550	125
Mineral oil tax: Reimbursement to licensed transport companies	75	0	140
Income and wealth taxes: privileged treatment of residential property			
• Undervaluation of rental values	4 510	4 510	(0)
• Flat-rate deductions and other advantages	375	375	(0)
• Undervaluation of property values	3 490	3 490	(0)
TOTAL*	**13 615**	**12 920**	**2 455**
TOTAL* without tax reliefs with negligible climate impact	**5 240**	**4 585**	**2 455**

* with the complete abolition of the commuter deduction and a heavy vehicle fee for light commercial vehicles to fully compensate for their non-climate-relevant external costs

In the following table, the potential tax revenue from the abolition of tax reliefs is divided between the federal government on the one hand and the cantons and municipalities on the other. This mainly relates to the reduction in income and wealth taxes, as the other taxes are only levied by the federal government. The amounts depend on the variants selected with regard to the deductibility of commuting costs and the new tax on light commercial vehicles. The maximum amounts were used, i.e., the amounts resulting from the complete abolition of the deductibility of commuting costs and full compensation of the non-climate-relevant external costs of light commercial vehicles.

Table 2: Distribution of potential tax revenue across the federal levels

Tax relief	**Potential tax revenue** (million CHF)	**... for the Swiss Confederation** (million CHF)	**... for cantons and municipalities** (million CHF)
Mineral oil tax and VAT: exemption for international air traffic	1 360	1 360	0
Income tax: Commuter deduction			
• Complete abolition	1 705	350	1 355
• Upper limit of CHF 3,000	385	0	385
• "Best in class" deduction	410	190	220
Income tax: company cars and free parking spaces at the workplace			
• Company car	100	15	85
• Free parking spaces	330	55	275
Heavy goods vehicle fee: non-compensated non-climate-related external costs	500	500	0
Heavy goods vehicle fee: Exemption for light commercial vehicles			
• Partial compensation of external costs, like heavy vehicles	375	375	0
• Full compensation of external costs	550	550	0
Mineral oil tax: reimbursement to licensed transport companies	0	0	0
Income and wealth taxes: privileged treatment of residential property			
• Undervaluation of rental values	4 510	1 220	3 290
• Flat-rate deductions and other advantages	375	100	275
• Undervaluation of property values	3 490	0	3 490
TOTAL*	**12 920**	**4 150**	**8 770**
TOTAL* without tax reliefs with negligible climate impact	**4 585**	**2 870**	**1 715**

* with the complete abolition of the commuter deduction and a heavy vehicle fee for light commercial vehicles to fully compensate for their non-climate-relevant external costs

The study was conducted by Prof Philippe Thalmann, Head of the Department of Urban and Environmental Economics at the Swiss Federal Institute of Technology Lausanne (EPFL), and Antoine Thalmann, Research Associate at the Swiss Graduate School of Public Administration (IDHEAP) of the University of Lausanne (UNIL), and funded by the Mercator Foundation Switzerland, the Migros Pioneer Fund and Clima Now. The full report is available here: https://go.epfl.ch/tax-reliefs. The responsibility for the content of this policy brief and the main study lies solely with the two authors.