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Carbon – to Trade or Tax – that's the Question!

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Abstract. The choice of between carbon emission trading and taxing carbon is framed as a pragmatic one, as essentially just different ways of implementing the same policy. We argue that this is not the case. The choice of policy instrument is strongly dependent on the will to make the system work. If there was a real will to reduce emissions, a carbon tax would have been and will be the preferred instrument, if there is no will – an emission trading is the best excuse available for not creating a high, not to speak about an ever-increasing carbon price. The "will" is result of the national and international relationship of forces between national and international interest groups. These relationship of forces is dependent on the possible social and political conflicts arising from the income distribution effects of an efficient carbon price, both on a national, supra-national, and international level. The key to formulating efficient climate policies is to focus on the income distribution effects on all these levels. The importance of income effects of carbon pricing has been illustrated by the massive popular mobilization against the petrol tax in France in November and December 2018. The choice between emission trading and carbon taxation is in fact an expression of the will to price carbon in a way that has a significant effect on emissions. Twelve years later, with the failure of the EU ETS, "riots" of the yellow vests, and the recent failure of the COP24 in Katowice, this insight must be the starting point of climate policy from now on.

Keywords: Border Tax Adjustments, Carbon Pricing, Emission Trading.

1 Introduction

The aim of this paper is to reflect on the experiences of carbon pricing policies a key element of any policy aiming at avoiding catastrophic climate change. Given the enormous amount of academic literature and even more so the often even more relevant reports and analysis from various climate policy think tanks this is in a direct sense an impossible task. Our contribution will not be in any encyclopedia overview over the literature, but to point out some, in our opinion, important factors, which is typically lacking in a great deal of the literature, which is the effects on income distribution of the various policies and the effect that has for the possibility to

mobilize sufficiently political support – or the other way around – avoid to strong social resistance to the policies one wishes to implement if one happens to be in power. From this follows that although there is a rare and surprisingly broad consensus among various schools of economic thought, from Marxists to Marginalist so to speak, that a carbon tax is generally preferable to an emission trading system, carbon tax systems is clearly marginal relative to emission trading systems when it comes to the amount of global emissions priced by carbon taxes. Why aren't economists listened to?

But before starting out to answer that question when it comes to national or EU policy, it is necessary to ask why there has been no success in reaching a legally binding international agreement, which in our opinion again is based on not making the income effects of such an agreement explicit. Why is it that after decades of COPs, that all we have is a system of NDCs, nationally determined contributions, which summed up clearly does not put us on path towards limiting global warming to 2 degrees, not to speak of limiting the warming to 1.5 degrees.

2 Methodology and Structure of the Article

The descriptive analysis has been used as a main scientific method in this article, where authors have analyzed several available resources about climate changes, as well as results from COP24 Conference in Katowice, where these results have not been published yet.

The paper is structured in the following way. Part 2 discusses the politics that is the possibility of reaching an international agreement. The conclusion is that any realistic analysis of the deeply conflicting interests should have led to the conclusion that such an agreement could not be reached by a consensus-based agreement and that should have been realized by anyone really interested not only emission reductions, but less ambitious – not rising emissions. The contribution by Nordhaus on "climate clubs" as a way to build to get an international price on CO2 is discussed as an important contribution to strategies starting from the national/continental level a resulting in a de facto agreement on carbon pricing internationally.

Part 3 analyses the development of the EU emission trading system (hereafter EU ETS) as the result not of a rational logic of how to reduce emissions in the most cost-efficient way, but from a political logic how to at the same time do something about the emissions without "rocking the boat", that is changing the socio-political status quo in any significant way. In our opinion this became very evident in the reform period from 2014 to 2018 where a lot of proposals for making the EU ETS work was put forward, but predictably not implemented, since the "spirit" of the EU ETS is to avoid policies that will give a steady increase in the price of emissions, that is policies that would bring emissions significantly down – even if still far less than needed from a climate science point of view.

Part 4 sums up the lessons we think should be learned, in particular sketching a new research agenda when it comes to the economics of climate policy.

3 The Impossibility of an International "Burden Sharing" Agreement

3.1 Differentiated Responsibilities or Capacities?

A key issue, and a key principle in the COP process has been "Common but differentiated responsibilities", the CBDR principle. This is not a new principle. It was also used in the Montreal Protocol, dealing with the depletion of the ozone-layer (CISDL 2002). Both problems are important and urgent, but since they are of totally different order of magnitude the CBDR takes on a totally different importance, again by order of magnitude. Practically nothing changed in most people lives and incomes from the "ban" of using HCFCs. Even the fridges look – and cost the same.

In contrast, a ban, or even a phasing out of fossil fuels would change, if not "everything" (Naomi Klein) so at least technologies, prices, trade patterns, profits and incomes. In fact, the continued use of fossil fuels was seen as so essential to developing countries so in the Kyoto protocol most countries had no obligation to reduce emissions at all. Not even a symbolic one. They were allowed to increase their emissions.

In reality it was never – and could not be a question of responsibility, but of capabilities. This because to calculate the responsibility involves a making several ethical judgements around which it is impossible to form a consensus. Were the US, UK and the USSR entities that could take on any sort of historical responsibility over a timespan of in principle 200, but at least 100 years? First of all, besides an extremely small group of natural scientists, nobody, neither the ruling class, nor the oppressed classes, did not know that GHG emissions were a problem at all. In practice global warming became a problem in the sense that that the political elites and ordinary people could act in a conscious way to the problem from late 1980ies. Should ordinary people in the Soviet Union reduce their consumption, their level of welfare in order to take responsibility for the emissions that happened under Stalin and his heirs? Has a level of democracy been established in Russia even after 1990 that makes ordinary people responsible even for the emissions that happened after the fall of the bureaucratic dictatorship? What level of collective and individual effort and willingness to sacrifice would make one say that the Russian people took their share of responsibility for global warming. In a similar vein one could ask if the American people are responsible for the US now withdrawing from the Paris agreement? The majority voted for Clinton, but an archaic and undemocratic electoral system made the republican, climate denialist Trump president despite the clear majority for the Clinton. What about the minorities in the US, the native Americans, the blacks, the Hispanics, are they equally responsible as the WASP majority? The peak of civil liberties movement is just over 50 years ago – and still there are campaigns like "Black lives matter". In short to be held responsible for contributing to climate change one needs to a clear influence on political outcomes and as we will discuss when it comes to the formulation of national climate policy many groups in society

are clearly not in a position to get implemented climate policy in aligned with their short term and/or long-term interests.

In reality it was never a question of responsibilities, but of capabilities. The Ozone layer, global warming is clearly a common responsibility, so the principle is much closer to the formula to each according to his/her needs, from each according to his/her capabilities. So what we all get when we solve the climate is a less unstable climate, less catastrophes, like breakdown in important eco-systems supporting food production, less extreme weather causing draughts, wild-fires, flooding etc. Our capabilities are also very different. Parties and persons in important power positions have more possibility to influence politics. In society a professor in social sciences has generally more power than the person cleaning the university offices, due to large differences in all types of "capital". Consequently the more capabilities you have to solve our common problems the more responsibility you have, but has nothing to do with any historic, that is through generations, , accumulated responsibilities.

3.2 "Common, but Minimal Action"

Already in Rio in 1992, the alternative principle for a "burden sharing" agreement was what we want to call "common, but minimal action". As the COP has demonstrated very clearly - is that it was as is impossible to agree on burden sharing according to responsibilities, besides what each country voluntarily wanted to do, which of course by the nature of the game is much less than what is needed. If one had agreed in the early nineties that everybody had to do something, for example a carbon tax starting with of 1 USD, rising with one dollar each year, that would have had a much stronger effect on the emissions, on technological development. In addition, we would have wasted much less time and resources on negotiations leading to almost nothing, that is a list of voluntary "contributions", which by no stretch of fantasy will amount to avoid a cataclysmic climate changes.

3.3 Who are "we"?

Our main hypothesis is that the "we", the countries participating to the COP-process did not want to do what was needed to save the climate. Countries are not a homogenous entity with one "will". There is no "representative agent". Countries consist of different interest groups. Since space does not allow any realistic analysis of these groups and their climate policy, as economists often do "assume" a very simple model where each country consists of a set of ruling elites that decides policy and "ordinary people" that does not influence the climate policy of the country. Ordinary people can roughly be defined as people that are not in the top two deciles of the income distribution, most of them, wage earners, students, and people on various benefits. The top two deciles have a significantly disproportionate share of both financial, real and social capital. The key question then becomes: are the rulers more interested in defending their disproportionate share of social wealth than they are in saving the climate. If the upper 2-3 deciles of the income distribution do not want an efficient climate policy, that is a policy that rapidly reduces the emissions,

there will be no reduction of emissions, since they, with all their resources are able to block any efficient policy. Our key point is that any politically possible and consequently the only efficient climate policy will be a threat to the vested interests of the ruling elites.

3.4 From Rio to Kyoto

The UN Conference on the Environment and Development was held in Rio de Janeiro in 1992. It the main outcome was the establishment of the United Nations Framework Convention on Climate Change (UNFCC) and the start of a series of top-level climate policy conferences known as the Conference of the Parties (to the Convention), the COP. The first COP meeting, COP1, is held in Berlin in 1995, but it is the 3rd COP meeting in Kyoto which is the first milestone in international climate policy. The Kyoto protocol is the first evidence of the fact that the rulers both in rich and poor countries, did not want to do anything about climate change. Most countries did not have any reduction targets at all, and the Annex B countries, practically speaking EU, Canada and Australia did prepare the loopholes from the start. Canada withdrew from Kyoto and Australia also in practice sabotaging it, by making the year 2000, the baseline year and demanding that the scandalous Clean Development Mechanism to be continued [8].

3.5 The EU from Rio To Kyoto

The initial reaction of the EU after the Rio meeting was to prepare for the introduction of a carbon tax. The various schools of economics, from Marxists to neo-classical Marginalists agree on that a carbon tax on fossil fuel charged at the "source" is the less bureaucratic, cannot be an object of speculation a pointed out in the [10] and treated at length in [6]. The following key points taken from [10] make this clear:

- Carbon taxes are generally easier to administer than a cap-and-trade system because they neither involve a market-based trading system nor require enforcing rules to prevent market manipulation.
- Moreover, they (carbon taxes) can be built on existing taxes (such as a fuel excise tax) and economic actors can predict their estimated liabilities reasonably well.
- Similarly entrepreneurs who invest in low-GHG technologies can anticipate the market advantage of their products relative to their dirtier competitors,
- (but) a carbon tax does not guarantee hitting a particular emissions target in any given year
- (but) what matters are the cumulative emissions – the year-to-year emissions are not of great concern in themselves.

The often mentioned point that emission trading with a cap controls the amount of emissions is first of all of little interest since the we must not only go down to zero emissions – which means no use of fossil fuel, we must have "negative" emissions.

Negative emissions mean capturing and storing CO2 in forests, in old oilfields and so on.

In light of the clear-cut, real-world advantage of a carbon tax to get emissions down, [7] correctly points out tan "The EU has developed the first and largest international emissions trading system in the world. This development is puzzling due to the EU's scepticism to international emissions trading in greenhouse gases (GHGs) in the run-up to the 1997 Kyoto Protocol". Not only in the run-up: "Most EU member states were, as noted, sceptical or even hostile to emissions trading during the 1997 Kyoto negotiations". The same point is made by [2]. He sees the EU ETS as the "… product of two failures; first, the European Commission failed in its initiative to introduce an effective EU-wide carbon energy tax in the nineties. Secondly, the Commission fought unsuccessfully against the inclusion of trading as a flexible instrument in the Kyoto Protocol in 1997". To analyse in detail why the EU commission failed is not the aim of this article, grosso modo it is no mystery. The proposal for a carbon tax met with strong opposition from dominant parts of industry in EU and from the US government, reflecting a rejection of the idea of a carbon tax from major parts of US industry, but a detailed analysis of the change position we have no found. The above-mentioned authors, and sources they point to like [3], mostly just mentions it as a starting point for discussing how the EU ETS became the key climate policy in the EU. In any case - a strong and early indication that the US would not participate was that in July 1997 the US senate voted 95-0 against any treaty that would have any mandatory obligations for developing countries. While there certainly was a good deal of out-right denial of the problem behind that vote against what was to become the Kyoto-protocol it pointed to a the clear weakness of the principle of "common, but differentiated responsibilities" as implemented in the Kyoto protocol, that the "innocent", developing countries were allowed to use fossil fuels as if the problem was not urgent and to that it was not important that every country had do something – how-ever "little" from the start because that would make the process – also for them more gradual, less dramatic. Not the least because if everybody did something, a very clear signal would have been sent to the fossil fuel industry that its days were numbered.

3.6 Preparing and Implementing the Loopholes

After the twin failures, the carbon tax and avoiding flexible mechanisms, the aim could only be to implement a "make-believe" system that is a system that looked like you were doing something, when you were not. . Because as we will argue below it was the deep "fear" in the ruling elites of a high carbon price that would meet with from not only owners of firms being afraid of losing competitiveness, but mainly from ordinary people that would see a flat – and most importantly – ever-rising carbon tax as socially unjust. If that hypothesis is correct or not, we cannot discuss at length, but the fact is that the EU ETS from the start had built in a lot of safety valves against the possibility of the carbon price. First of all, the EU ETS did not and do cover the whole economy, only 40 percent. In our view it is not any mystery why transport is not included in the EU ETS. An increasing price of petrol is probably the

most important single price that ordinary people care about. That any attempt at significantly rising the price of petrol would meet considerably popular opposition was clear already in the late nineties and has been confirmed by the fact that an ever-increasing petrol price it is not a widespread demand, even from political forces very concerned about global warming. As we will see below, the few attempts of implementing a fuel tax has up to now been defeated by popular resistance. Secondly, in order to avoid "carbon leakage", that is firms moving to countries without a carbon price, a generous amount of free emissions was given for free to for example the steel industry. This was in fact a direct subsidy, since the steel industry could sell the emissions rights, which even at a low price would generate enormous sums of money. Thirdly, there were the "off-sets", in particular the "Clean Development Mechanism" (CDM). Off-sets are hypothetical reductions given contra-factual that would not have been made if the creator of off-sets could not sell those emission rights and be able to buy new and "greener" technology, that is the principle of "additionality". The fundamental problems with off-sets were pointed out from the start and experiences fully confirmed this, as pointed out by among many [8], various authors in [2], or [9]. The unavoidable result of the fraud and scandals connected to the CMD was that the use of such obviously dubious off-sets was banned from the EU ETS – and their price collapsed.

3.7 The Allowance Surplus and the Reform Period

The loopholes worked as intended, the danger of a high, not to speak about a rising carbon price as the "cap" was lowered was completely avoided. The loopholes secured a continuous oversupply which meant that the price per ton CO2 from 2012 – 2017 were between 5 and 10 Euros, far from the initial "close to 30 Euros" when the system was new in 2008. That is before the marked learned about the oversupply. There is a huge literature on the reform period from 2013 onwards. "Rescuing EU Emissions Trading: Mission Impossible?" was the title of an article of [9]. For the non-expert, the publications from non-profit think thanks like [6] describe in in a clear non-expert prose why the surplus exists and proposes how to "fix" the EU ETS, cf. [6]. The proposed reforms are very straight forward, like no more free allowances, decreasing the amount of emissions allowed per year (the "cap") faster, technically speaking increasing the "linear reduction factor", the "destruction" of some of the current surplus, just to mention the most important proposals. The key instrument that came out of years of negotiations between the Parliament that wanted more radical reforms and the Commission was the Market Stability Reserve, the MSR. The stated intention of the MSR is to avoid a very low carbon price that is between 5 to 10 Euros. Such low prices will probably be avoided. But confirming our hypothesis that there is no real will among the ruling elites to have an ever-increasing carbon price, the MSR is constructed so that you will not "tighten" the EU ETS sufficiently. There will still be a continuous surplus of allowances to make the price "ineffective" that is not having any impact on the emissions anywhere close to what is needed according to the Paris agreement and the latest IPCC special report on the 1.5 degree limit. In a recent working paper, two researchers at the Danish Climate Council used simulation

to analyse the effect of the compromise reached by the EU Parliament and the EU Commission in June 2018 on the EU ETS in the coming decade(s). Their main conclusion is not at all surprising "The model simulations indicate that the current allowance surplus may not disappear until sometime in the 2050s if no further tightening of allowance supply is undertaken", [1]. If we suppose that the MSR will continue to give a carbon price around 20 Euro per tonne, this is still not more than roughly 5 cents per litre of petrol, which will have some effect on emissions, but not anyway near what is needed. The Stern&Stiglitz report writes that "analysts suggest that the drop in the European Union (EU) Emissions Trading System (ETS) emissions (by 2.4 percent in 2016) was primarily driven by the carbon-price floor introduced in the United Kingdom, where a £18/tCO2 top-up on the EU ETS price resulted in the coal power plants reducing their emissions by 58 percent in 2016." The irony is that a £18 price floor is just another name for a tax, it is unaffected by the supply and demand of allowances. The UK is not the only country seeing the necessity and advantages of a stable carbon price around 20 Euro or higher. Carbon Pulse on October 11th 2018, reported that Switzerland, the Netherlands and California were planning to introduce a floor. Internationally, since 2008 the carbon tax system in British Columbia, where tax income has been redistributed, was for a long time the "beacon" a "carbon fee and dividend" system. In October 2018, Canada's prime minister Justin Trudeau, announced that a carbon fee and dividend system would be the national "default" policy if the regions did not have their own carbon pricing systems [4].

4 Discussion

As pointed out above, from 2012 and to the first months of 2017 the price was hovering mostly just above 5 Euros. As the outline of the new setup of the EU ETS started to emerge in the Spring 2017, the EU carbon price started to rise and reached 26 Euro in early September. As predicted by our hypothesis that strong forces are working against a high and steadily rising carbon price, already on the 13th of December, Caron Pulse reported that "Poland's energy minister on Thursday urged Brussels to step in to cool EU ETS prices, which this week spiked to a 10-year high near €26, Polish newswire PAP reported." Poland also took steps on it's own to cool prices by announcing to "Poland to nearly double 2019 auction quota with surprise EUA sale notice" was a headline in Carbon Pulse December the 5th. Poland is of course not alone. The dominant policy in Germany is to continue and expanding coal mining as nuclear power is being phased out, the so-called Energiwende. There is at the same time in Germany a rising resistance to this expansion of especially open day mining, and the climate movement won a small victory when the Hambacher Wald was not cut destroyed in order to expand day-mining. If the resistance to increased use of lignite is effective in reducing supply – this will also result in rising prices – which also will be socially unjust and result in clash of interests between the climate movement and ordinary people.

The resistance to unjust, flat tax increases has got it's clearest expression in the failed attempts of three French presidents to have a carbon tax on fuel. On 23rd of March 2010 a headline in the British newspaper The Telegraph (2010) was "France ditches carbon tax as social protests mount", so Sarkozy failed. Hollande tried four years later. The Guardian headline was "French eco tax mobilises new generation of Breton red caps" (https://www.theguardian.com/world/2014/jan/03/french-eco-tax-new-generation-breton-red-caps). As we were finishing this paper, the protest against the eco-tax on fuel announced by president Macron unleashed a protest movement of an order of magnitude and political importance. The movement of the "yellow vests" (gilets jaunes) seemed to start out as only a right-wing populist anti-tax movement, but it soon developed more demands – some of them of a clearly more left wing character. It is of course to early – and not the aim of this paper to analyse the "yellow vest" movement in any detail. The point is that without taking the income effects and the resulting political effects of a high carbon price into consideration one cannot formulate a climate policy that will mobilize enough popular support to "do the job", that is reducing the emission by 50 % by 2030 [5].

5 Conclusion - the End of the World versus the End of the Month

As a way of concluding we think the new saying that emerged from the yellow vests movement to care about the end of the world or the end of the month really is the Gordian Knot of climate policy. Most people do care about both and the key to mobilising them is to align their short term economic interests with their long term interest in a stable climate. Peoples interest in a stable climate makes a rising carbon price mandatory and the only way get them to support at rising carbon price is that they benefit in the short run if they support that. This makes a progressive carbon tax the only way to cut the Gordian knot.

The result of the last COP24 in Katowice showed that the more or less democratically elected leaders still do not dare to rise the carbon price. The indicator that literally speaks huge volumes of CO2 emissions is that the fraudulent sale of "offsets", the Clean Development Mechanism was not abolished. So the old and tried loophole for those who do not want to reduce emissions "at home" and solve that problem by "indulgences trade" are still allowed to continue with a low carbon price at home. This kind of "free-riding" of course has a devastating effect on all efforts to have collective action to reduce emissions. The solution to that problem is as Nordhaus as analysed thoroughly is to create a "carbon club" and have carbon import tariffs penalizing the countries that do not have carbon pricing at a sufficient level. But in order to create a carbon club, a sufficient number of countries, that means ordinary people in a sufficient number of countries must mobilise in favour of a progressive carbon tax – spes uniqa.

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