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Cross Policy Learning: Drawing Lessons for Personal Carbon Trading (PCT) Policy from Food Labelling Schemes

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Abstract:
Tackling climate change is one of the biggest challenges expected to face policy makers around the globe over the next decade. Personal Carbon Trading (PCT) is a proposed downstream cap and trade mitigation policy aiming to reduce energy demand by putting individuals under an obligation to live within an emissions budget. As PCT is a novel policy instrument which is not yet been fully developed and which was never implemented, there is no policy experience to learn from. This paper suggests a cross policy learning strategy to aid the design and estimate the effectiveness of new policy features when evidence is limited or does not exist. Cross policy learning enables those designing policy to draw lessons from specific features of existing policies with completely different goals but with some similar means. Using cross policy learning, this paper draws some lessons for PCT about carbon labelling on appliances from food labelling schemes. Issues such as meaningful units of consumption as well as a benchmark for comparison are analysed in the context of carbon budgeting, which is an important aspect of PCT.

Introduction:

Tackling climate change is one of the biggest challenges expected to face policy makers around the globe over the next decade. Personal Carbon Trading (PCT) is a novel climate mitigation policy proposed in the UK. In a nutshell, PCT is a mandatory down stream 'cap and trade' policy for individual energy end users. Under PCT the national direct carbon emissions from households' energy use, private transport, and aviation are capped and emission rights are allocated equally and for free between individuals. Each individual receives an annual emission allowance which is tightened periodically, according to national targets. Every time people pay their energy bill, put fuel in their car, or buy flights, they need to surrender carbon credits from their account in proportion to the emissions they generate. A trading scheme would enable people to buy extra allowances if they need more than their allocated amount or to sell extra credits if they use less. The price of carbon would be set by the market, while a 'safety valve' would be set by Government to ensure carbon price is affordable.

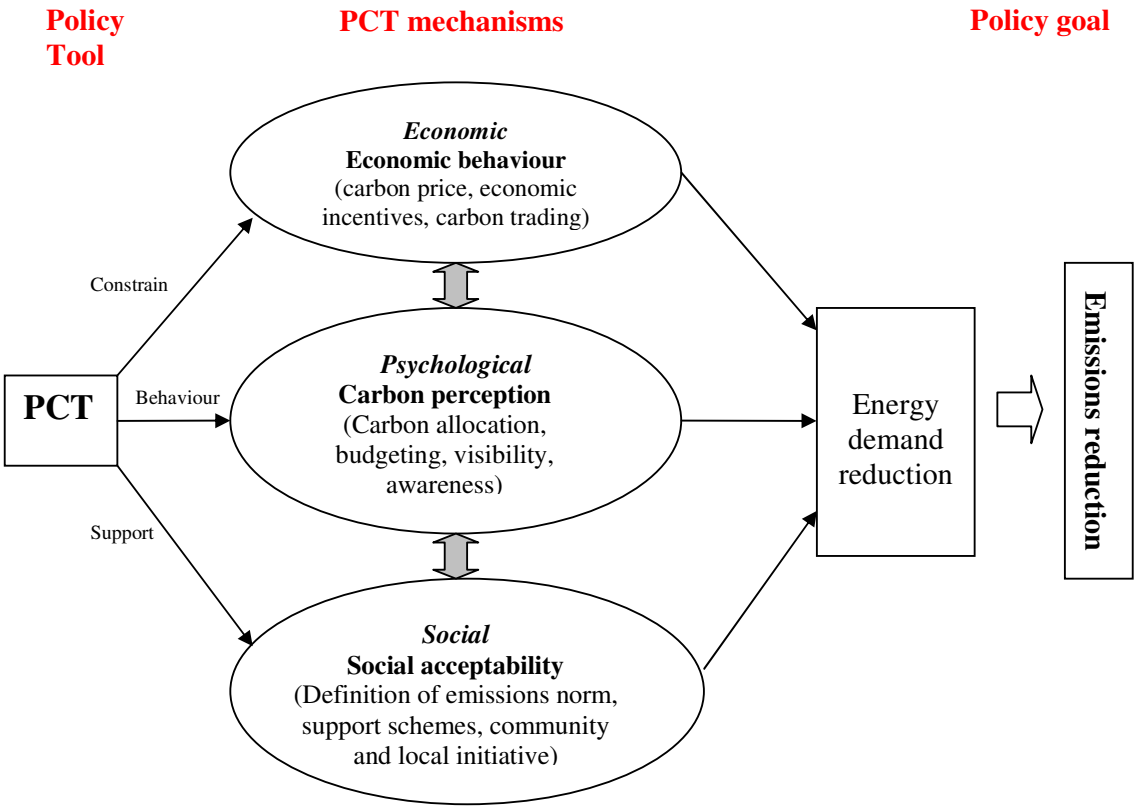
In the UK, average per capita carbon emissions stand at 9.1 tonnes a year. In the USA, for comparison, it is 19.7 tonnes and the global average stands on 4.0 tonnes (International Energy Agency, 2005). PCT would cover about 42% of the UK emissions, from which 41% are related to space and water heating, and 43% to private transport including aviation (Department of Trade and Industry, 2007, p 49).

Unlike a carbon tax, PCT does not build solely on the economic route, i.e. the carbon price, to deliver demand reduction. Instead it additionally tackles the psychological and social routes, which are considered to be equally important as the economic one. It supports a new perception of personal carbon emissions by increasing carbon awareness and carbon visibility and by setting a normative personal

carbon footprint – the allowance. Theoretically, these combined synergic three mechanisms – economic, psychological, and social - have a greater potential to change consumers' attitudes to energy demand and alter their behaviour toward energy saving. In the same time, PCT instrument does not forbid activities but instead allows each one to audit self preferences within the personal cap. Diagram 1 summarizes the three PCT mechanisms for delivering demand reduction. However, whereas the knowledge of the effectiveness of taxation as a policy instrument is considerably extensive, the knowledge of PCT as an instrument is limited.

PCT has gained the interest of both researchers (Bottril, 2006; Hillman and Fawcett, 2005; Starkey and Anderson, 2005) and policy makers (Defra, 2008; House of Commons Environmental Audit Committee, 2008; Miliband, 2006a,b; Roberts and Thumin, 2006; RSA, 2007). Yet, PCT effectiveness as a policy instrument has never been tested and, even if it were to be trialled, only limited aspects could actually be tested before launching the policy (Fawcett et al, 2007). Nonetheless, before PCT could be considered as a real policy option scholars and policymakers need to answer the complex set of questions: if such a policy path would be chosen by government, how should it look, what policy features should it include, what would be the policy costs, who will set the price of carbon, what enforcement mechanisms need to be put in place, what would be the distributional effects of a carbon cap on different populations, who would be the 'winners' and 'losers' of such policy, and so on. Cross policy learning strategy suggests a new form of lessons drawing for policy learning in the lack of direct evidence and subsequently provides answers to some of the above questions.

Diagram 1: PCT mechanism to deliver personal energy demand reduction



Cross policy learning is a strategy used to aid the design and estimate the effectiveness of specific features relating to a radical policy when evidence is limited or does not exist. It enables those designing policy to draw some lessons from specific features of existing policies with completely different goals but with some similar means. It requires first to identify the similarities between the relevant policies, which often are modest and very specific, second to acknowledge the differences and hence the limitation of the lessons that can be drawn, and third to draw the lessons with the necessary adjustments. Ultimately the process results with various sets of specific lessons, which together provide a clearer picture as to how the novel policy should look, what features should be included, and how would it achieve its goal. Notwithstanding, lessons are also about what not to adopt and not to do. These lessons are as valuable for policy makers as those which suggest what to do and adopt. This paper uses cross policy learning to draw lessons for PCT from food labelling schemes.

Drawing lessons for PCT

Let's assume for a minute that everybody has a personal carbon budget to manage and trade with. It is straightforward and easy to understand that you would benefit from reducing your energy demand and sell your spare credits (IPPR, 2008). But what do you need to have, to know, and to learn in order to manage and live within the limits of such a budget? What policy features and programs can support you?

Experience has a unique status as a justification of effectiveness. The fact that no PCT instrument exists does not mean that there is no experience and knowledge of some aspects of the policy from which to learn. Different programs, schemes, and policies show some resemblance to PCT and by better understanding the similarities and dissimilarities few important lessons - even if limited in scope - could be drawn for designing a PCT instrument. These 'local' lessons accumulate and contribute to the understanding of PCT and the ability to estimate its potential as a policy instrument.

The mechanisms by which PCT delivers demand reduction shown in diagram 1 helps to identify parallels with other programs and allows us to focus on knowledge gained in different disciplines and draw some lessons. For example, literature about mental accounting and mental budgeting (Heath and Soll, 1996; Thaler, 1999) can contribute to understanding and developing the 'constrain' route. From insights into the way people budget their money, plan or limit their spending, and perceive budgetary limits we can hypothesise as to how a carbon budget would affect behaviour (Capstick and Lewis, 2008) and accordingly, draw some lessons as to how it should be introduced.

Likewise, Seyfang (2007) made the first conceptual link between PCT and related experience with alternative allocation systems. Seyfang drew lessons for PCT from experiences gained with complementary currencies, such as Time Banks and Local Exchange Trading Schemes. Contextual, social, cultural, and acceptability aspects were analyzed comparatively, as well as people's ability to understand a new currency. Seyfang pointed at two key areas for future research and action: the development of carbon literacy skills and culture; and harnessing efforts of collective active citizenship to support the introduction the carbon currency.

<u>Healthy eating programmes: Food labelling</u>

Overweight and obesity are recognized as one of the 21st century's epidemics. Similar to the need to cut carbon emissions in order to halt climate change by consuming less energy or reducing our energy's carbon intensity, people need to consume less food,

or less fattening items, in order to remain healthy and not gain extra weight. Of course, the motivations for eating (and over eating) are different from those of energy consumption. Furthermore, both the good and bad effects of ones' eating habits are felt by the eater directly, whereas the effects of energy over consumption and the related emissions are remote and in many senses invisible to consumer. Yet, in both cases, achieving the goal requires a voluntary change in behaviour, with only limited regulations to enforce a particular behaviour. Therefore, information and education play huge role in bringing about these changes.

Governments, commercial and non commercial organizations have all issued various education and support schemes in order to help people reduce weight and eat healthy diets. One such scheme is food labelling, which includes, among other pieces of information, a Recommended Daily Allowance (RDA) for various food groups, such as fats, salts, and sugar. As part of the healthy eating education efforts the RDA labelling provides daily recommended calorific budget guidelines.

Many surveys and studies have shown that the majority of the public do look at food labelling (MORI, 2005) and that food labelling is important when making decisions about which food to buy and eat (Heller, 2006; Thomas, 2007). However, studies assessing nutrition-label understanding suggest that consumers have difficulty applying arithmetical skills, performing serving-size calculations and comparing products of varying size and type (Mackison, Anderson and Wrieden, 2008). Additional interpretational aids such as verbal descriptors and recommended reference values assist the consumer in making product comparison and putting products into a total diet context. Therefore, improvements in nutrition labeling and in particular interpretational aids have the potential to help consumers assess the nutrient contribution of specific foods to the overall diet (Cowburn and Stockley, 2005).

Three lessons could be drawn from this to labelling for PCT. The first relates to the units appearing on the labelling. The second relates to the proximity of the information to the relevant action. The third relates to meaningful information, i.e. facts that enable and support 'budgeting'.

Under different EU Directives (92/75/CEE, 94/2/CE, 95/12/CE, 96/89/CE, 2003/66/CE) most white goods, light bulbs and cars have to be labelled with an EU energy label. The label provides information about the item's energy efficiency rate, ranging from A to G, where A is the most energy efficient and G the least efficient. This and other information presented to customers aims to help them make informed choices when comparing various models of the same appliances. Although much of the information appearing on the labels is not easy to understand and is meaningless to many, the majority do recognize that A is more energy efficient than B and correspondingly consumes less energy (Oxera, 2006). But this is virtually meaningless for carbon budgeting. It is like giving information about fat content in food to someone whose weight loss plan is based on calorie counting. If carbon is a new currency, information should be presented in the currency units. Simply providing an energy rating is not enough.

There are policy design challenges which will need overcoming if labels are to be provided with information about appliances' carbon emissions. Whereas a kWh is a kWh whatever the energy source is, carbon emissions vary according to the carbon intensity of the grid. Specific appliance connected to a grid and fed by renewable energy emits significantly less carbon than the same one connected to a grid fed by gas or coal. What's more, grid carbon intensity varies between countries, within countries, and sometime within the same day. Such a problem may be dealt with if a table appeared on the appliance with a variation in carbon average emissions

according to the different grids or the energy companies. This may also put pressure on suppliers to increase their efforts to decarbonising their electricity.

Another lesson is related to the proximity of the information to the relevant action. People look at food labels when they buy food. They also look at energy labels when they purchase new appliances. Yet people replace appliances such as fridges, washing machines, and driers, once every number of years, and this is when the existing energy labelling is supposes to make a difference. Hence it is designed to enable easy comparison at the point of sale but once the appliance is bought most of the information is meaningless. Carbon budgeting, on the other hand, requires continuous engagement and decision making, which need to be supported by different sort of information.

The challenge for policy designers is to identify the situation where information about carbon emissions is relevant for consumer decision making and think of a way to provide the information to the user at this point in time. Although this sort of information could be provided on the internet, this is not handy enough and requires a degree of effort that most people will not be willing to make. Decisions, such as using the dishwasher, using a tumble drier, as well as setting the washing machine or the heating one degree higher have an impact on carbon emissions but currently this impact cannot be easily quantified by users. A label put on or nearby the appliance itself giving some sort of information related to the activity, even if not 100 percent accurate for every home and setting, could support informed decision-making and carbon budgeting.

And this relates to the third lesson, which is the importance of meaningful and interpretable information. Cowburn and Stockley (2005) suggest that adding some kind of benchmark to food labelling, like the percentage of dietary reference values, guideline daily amounts, or non-numerical format helps consumers to interpret information. Good labelling should support both the budget management and the budgeting process. People find it easier to budget calories when calories are given not only per 100g of product but also per serving size. It is easier, for example, to count calories when the label provides information about calories per one spoon of honey and not only for 100g of honey. Likewise, a slice of Pizza makes more sense than 100g of Pizza, given that you know how many servings are available per Pizza. It is also easier for people to budget their calories if they have some sort of benchmark, such as the contribution of the food item in reference to the RDA. For example, decisions are better informed if one knows that a slice of Pizza provides 10% of his recommended daily calorie intake. The parallel in carbon labelling is a label that provides emissions per meaningful unit of activity and also gives the fraction of the specific activity relative to the periodical carbon budget.

The challenges for policy designers are to identify what is a meaningful unit of activity and what would be the most appropriate benchmark to support carbon budgeting. Here there is a need to differentiate between appliances which are ‘always on’, such as fridges and freezers, and appliances which are ‘switched on’ intermittently by consumers, such as dishwashers, washing machines, air-conditioners, and tumble driers. Where in the first case there is nearly no user interface and emissions are relatively constant, in the second case emissions are influenced by users’ behaviour and choices. Decisions such as turning on a half-full dishwasher or which program / temperature to choose has an impact on emissions and accordingly on the personal carbon budget. To evaluate this impact and use it in their budgeting process people need assistance. Relevant information to users, therefore, would be carbon units emitted per cycle for each washing, dish washing, or drying. Some

information is meaningful when it is given per unit of time, such as one hour of air conditioning or half an hour of using electric cooker at a given temperature.

Identifying a meaningful benchmark for carbon budgeting is a more complex task. Under a PCT scheme carbon credits are allocated periodically, and possibly yearly. Presenting information about a meaningful unit of activity with reference to one year credits might not be very useful for budgeting as it most probably take the form of 0.000X%. People might even get confused with the insignificant contribution of each activity compared to their yearly budget. This is like budgeting one food item in term of recommended monthly calorie allowance. Benchmark of an average week, month, or quarter might be more meaningful, depending on the activity type. For the 'always on' the length of the period for benchmark does not matter, as the fraction remains the same. For other appliances, however it does. If one knows that each 'eco' cycle of the dishwasher emits X units of carbon, which are about Y% of the average week credits, his budgeting choices are better informed. It is true that this sort of information is not completely accurate but can definitely help. Smart metering and smart displayers may enable the provision of better tailored and accurate information directly to the consumer. But in their absence, some sot of detailed labelling could also offer this information, in a similar way food labelling does for those budgeting calorie intake.

Summary

This paper suggests cross policy learning as a 'drawing lessons' method for policy design in the lack of direct evidence or policy experience. Cross policy learning is used here to draw a few lessons from healthy eating programs for PCT, a novel mitigation instrument to reduce energy demand proposed in the UK. The experience gained with food labelling and its effect on behaviour is analysed in the context of PCT. By decomposing PCT to its different components, identifying relevant features to learn from in food labelling, acknowledging the limits of comparison, and making adaptation to carbon units, the cross policy learning method enables the examination of important issues related to carbon labelling on appliances. Two such issues are: meaningful units of consumption and benchmark for comparison. It also points at problems related to carbon labelling that require further thought and investigation, such as the variation in the grid's carbon intensity. Carbon labelling is important for supporting personal carbon budget management, which is a central aspect of any PCT instrument.

Whether to choose PCT or not as a policy instrument to deliver emission reduction targets is beyond the scope of this study and is influenced by many political, cultural and social factors. However, if such a path is chosen, there are some important lessons to learn from other policies as to how to design it. While the concept of PCT and carbon credits that you can trade with, is easily understood by the public (IPPR, 2008), the details of the actual policy and how it would run are complicated and far from being straightforward. Cross policy learning has the potential to help thinking of these details in some structured manner.

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