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A THEORY OF THE IMPEDIMENTS TO ENVIRONMENTAL TAX REFORM

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A Theory of the Impediments to Environmental Tax Reform

by

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December, 2001

Abstract

Environmental Tax Reform (ETR) is widely accepted to be a policy with desirable environmental, and other economic effects. The question arises then as to why its implementation has been so patchy. There is a broad literature on the economic impact of ETR, however, there have been very few research efforts devoted to understanding the roles and imperatives of the public, policy-makers, businesses and other stakeholders who are addressed by ETR. This paper examines the impediments to environmental tax reform. Focus groups were formed comprising of members of the general public and these provided a forum for detailed reactions to the ETR concept. Interviews were conducted with policy makers and key business people in an attempt to identify both the patterns of thinking behind ETR and the main obstacles to its introduction. Having presented the results, a theory of the main impediments to ETR is developed. The principal potential impediments to ETR include: mistrust of the government, implausibility of the policy, means of hypothecation, information asymmetries, the political system, the structure of government, the macroeconomic environment, the impact on competitiveness, inequity between sectors, regressivity, elasticities and the level of the tax, terminology, and the marketing of ETR.

Introduction

Over the past two decades, economic or market-based instruments have become accepted as effective policy tools with which to address environmental concerns. The OECD (1997) have defined economic instruments as "those policy instruments which may influence environmental outcomes by changing the costs and benefits of alternative actions open to economic agents….They aim to do so by making the environmentally preferred action financially more attractive". Put more simply, economic instruments create incentives that encourage people acting more-or-less in their own best interests, simultaneously, to treat the environment in a way that is in the best interests of society. In general, economic instruments reward people monetarily for producing environmental benefits and penalise people for imposing environmental costs. They are closely related to the Polluter Pays Principle whereby people are made to pay for using the environment (Clinch, 2000). Economic instruments tend to be favoured by economists in comparison to traditional command and control regulation due to their cost-minimising characteristics (static efficiency), their encouragement of dynamic efficiency, lower informational requirements and relative ease of administration. There is some evidence that environmental performance is improved (Convery, 1998), particularly if reduced bureaucracy makes their implementation easier. In addition, certain economic instruments are revenue raising.

The European Union has taken the lead in encouraging the use of market-based instruments both across the Union and in member states. The Environmental Action Programmes of the EU outline the European Commission's intentions and recommendations regarding environmental policy. Ultimately these Programmes are translated into Regulations, Directives, Recommendations and non-biding Opinions (Artis and Lee, 1997). Directives, the most common instruments of EU Environmental Policy, are binding as to the results but not the method of achieving them. The Fifth Environmental Action Programme, covering 1992 to 2000, which outlines the main environmental policy issues facing the EU and the policy instruments available emphasises the integration of the economy and the environment. The Programme states that its strategy "is to create a new interplay between the main group of actors (government, enterprise and public) and the principal economic sectors (industry, energy, transport, agriculture, tourism) through the use of an extended and integrated range of instruments" (European Environment Agency, 1999). In this regard it places particular emphasis on the use of economic instruments.

Of all the economic instruments, environmental taxes and charges are the most frequently used economic instruments (Clinch and Gooch, 2001). They impose an obligation on users to pay for the use of the environmental resources. These bring the costs of pollution and of using environmental resources into the prices of goods and services produced by economic activities. Emissions and effluent charges and taxes are levied upon the quantity and/or quality of discharge into the air, water and soil, and are based either on direct measurement or estimations of discharge. Product charges and taxes are levied on products that cause environmental damage through their extraction, production, use and disposal (Danish Environmental Protection Agency, 1999). They may take the
form of a charge or tax relating to the composition of the product, for example the phosphorous content of fertilisers or they can be levied upon the product itself, for example a fuel tax (OECD, 1994, p19). Resource use charges are payments made in return for direct use of an environmental good. Payments may be implemented on the basis of quantity (for example, mining tax), time scales (for example, hunting and fishing permits) or access (for example, national park entrance charge). User charges are payments made in return for the provision of a service, such as the collection and treatment of emissions and waste, for example, sewage charges and municipal waste charges.

Taxes and charges are revenue raising and there are several options to recycle fiscal revenues as outlined by Baranzini (2000):

- 'Fiscal reform' (or revenue neutrality) whereby revenues from an environmental tax are used to decrease other taxes, so that the government budgetary position is unchanged and the overall tax burden remains the same. The general underlying principle is to shift taxation from economic 'goods' (like work, income or property) to environmental 'bads' (like pollution). There are several possible options concerning the reduction 'package', such as: decrease taxes on labour, goods, households and corporate income, or property. A particular case of revenue neutrality is sector neutrality, i.e., the additional taxes from one sector are returned only to that sector (Morris et al., 1997).

- 'Earmarked' or 'Hypothecated' whereby revenues are allocated in advance to finance specific environmental programmes (e.g. environmental funds, environmental projects, or research and development activities).

- 'Compensation measures' whereby revenues are used to compensate some of those most affected by the tax. For instance, lump-sum re-distribution to the population could correct for some of the negative impacts on low-income households, while subsidies to introduce less emitting technologies could compensate polluters for additional abatement costs.

Depending on the way fiscal revenues are recycled, carbon taxes may generate some benefits in addition to those resulting from pollution abatement. These additional benefits may be divided in two categories (Hourcade, 1996):

- An 'economic double dividend': recycling carbon tax revenues by reducing distortionary taxes may have positive impacts on economic growth, employment, or technological development.

- An 'environmental double dividend': reducing carbon emissions may be accompanied by a decrease in local pollution.

The most common definition of Environmental Tax Reform (ETR), which we also adopt here, is the use of the revenue from environmental taxes to reduce distortionary taxes, in particular, taxes on labour. The European Union first advocated ETR in 1993 in the Delors' White Paper on Growth, Competitiveness and Employment in order to avail of the double dividend (European Environment
Agency, 1996). Since then, Environmental Tax Reform (ETR) has become widely accepted to be a policy with desirable environmental and other economic effects even though there is still a dispute over the existence of otherwise of the double dividend.

**Box 1. Reasons for the continued use of regulation over economic instruments.**

- familiarity breeds affection: those being controlled regard it as 'tolerable' while an alternative approach might not be so.
- there is a comfort factor for the public, administrators, and politicians in knowing that each individual plant or facility is 'controlled'; the necessary institutions - courts, government agencies, business associations - are in place with sufficient credibility and adequately trained staff to implement the regulations to some minimum degree of competence
- there is a cultural dimension whereby in societies where there is a respect for the law, where the reflex is to obey the law, to comply, the command and control approach is likely to be more feasible than where such respect does not exist
- in some cases, it is the most effective means of achieving the relevant objective. For example, in the case of radon (a naturally occurring carcinogenic gas) which can be emitted in households, a regulation requiring the relevant protection and other measures be installed in all new houses ensures that the remedial action is taken at a time when it is only a fraction of the cost of retrofitting measures to deal with the problem
- there are pollution categories where even small emissions are thought to be so toxic that a policy instrument is needed where there is no margin for error, where thresholds must be met at all times.
- political barriers to implementation including perceived impact on competitiveness, perceived impact on low income groups.

Source: Adapted from Convery (1998).

The question arises then as to why the implementation of ETR has been so patchy. While authors such as Convery (1998) have examined the reasons as to why policy makers have persisted with using traditional command and control regulation (see Box 1), there have been very few research efforts devoted to understanding the roles and imperatives of the public, policy-makers, businesses and other stakeholders when it comes to the introduction of Environmental Tax Reform. By examining such roles and imperatives, this paper develops a theory of the impediments to ETR.
Methodology

As stated previously, for the purposes of this research, ETR is defined as taxing greenhouse gas emissions directly or via direct and indirect energy taxes and using the revenue to lower labour taxes. The results in this paper come from work come from a case study of Ireland carried out by the authors of this paper under a EU sponsored research project involving partner teams who carried out similar studies in Denmark, France, Germany and the UK.

Focus groups were formed comprising of members of the general public and these provided a forum for detailed reactions to the ETR concept. Five groups were organised by the following classifications (sex, age, class and political affiliation) with 8 respondents (4 male and 4 female) in each group:

1. Urban 20-45 C1 (Middle class)
2. Urban 45-60 C1 (Middle class)
3. Outside Dublin 35-55 C1 and C2 (Middle and working class)
4. Urban 20-45 C2 (Working class)
5. Urban 65+ C2 (Working class)

Recruiters were supplied with a short questionnaire to assist them in recruiting the required respondents. Political affiliation was determined by how the respondents voted in the last general election.

While Focus Groups provide much richer results than would a representative survey because they allow thought processes to be elicited, they suffer from limitations. Firstly, they are not necessarily representative of the population from which they are drawn. Secondly, the focus groups may condition participants to express a higher concern for environmental issues (the perceived principal concern of the groups) than for other issues (e.g. unemployment). Focus group dynamics are important. For example, certain members of the group may be much more confident and assert their views on the rest of the group. Such limitations should be borne in mind when interpreting the results.

Interviews were conducted with the key policy makers in an attempt to identify both the patterns of thinking behind ETR and the main obstacles to its introduction and these can be thought of as relatively representative. Eleven policy makers in Ireland were interviewed. They were: Department of Finance (2); Department of Environment and Local Government (2); Green party; ex-Taoiseach of opposition party; ex-Secretary of the Environment; Business lobby; Energy sector; ex-Advisor to Department of the Environment; and Trade Union leader. As Ireland is committed to a social partnership (see next section), an attempt was made to procure the opinions of the relevant parties in the partnership. but the number was limited for practical reasons and thus the views expressed may not be representative of business as a whole. Eight interviews where conducted with key business

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people. Although not expected to be a representative sample, they were chosen with an view to having a variety of different sizes and environmental images in the sample, taking some uniquely Irish aspects (e.g., the computer and high tech industries) into the decision.

The text from the interviews and focus groups was analysed using a software package for qualitative data, QSR Nud*ist 4. This package assists in analysing unstructured data using a coding system which is arranged in a hierarchy. Hypothesis and links can then be investigated efficiently from a significant amount of raw data.

Prior to the presentation of the results, it is useful to present the current situation as regards economic growth, greenhouse gas emissions and environmental tax reform.

**Irish Economic Growth and Greenhouse Gas Emissions**

The Irish economy has been the fastest growing in Europe for the past 8 years. Annual Gross Domestic Product rose by over 60% over the 1990 to 1998 period, industrial output more than doubled, visitor numbers from overseas rose by over 75%, and retail sales rose by almost 40%. Of the main economic sectors, only agriculture remained relatively static, showing a 3% rise.

The high and positive correlation between GDP and energy use has resulted in a rapid rise in greenhouse gas emissions over the past 10 years. Most of this growth has occurred since the 1990 base year for the calculation of emissions under the Kyoto Protocol. Such unprecedented growth has resulted in estimates that, under a ‘business as usual’ scenario, total emissions would increase by between 37 per cent and 41 per cent. The transport and residential sectors would account for over 44 per cent and 20 per cent of this increase respectively with the share of emissions produced by the transport sector rising rapidly and the proportionate share accounted for by agriculture and the residential sector falling (Clinch, 2001). Thus, despite being allowed a 13 per cent increase in emissions due to its status as a ‘cohesion country’, Ireland will exceed its Kyoto target (of 60.74 million tonnes of CO₂-equivalent) by between 13 and 14.4 million tonnes if business as usual persists (Figure 1).

While the rate of growth of GDP has been higher than many expected over the 1990-2000 period, it has been clear ever since Ireland signed the Kyoto Protocol that the country faces severe difficulties in meeting the set target. Despite the large amount of rhetoric in various reports regarding the
aforementioned suggested initiatives, there have been virtually no significant measures implemented and despite the Bush administration's refusal to sign the Kyoto Protocol, the EU is pushing forward with the burden sharing agreement (Bonn, 2001) so Ireland still has to live up to its commitments under Kyoto.

With regard to economic instrument use, Ireland opposed the development of a European carbon tax despite the fact that such a flexible mechanism would reduce the cost of emissions reductions. However, more recently the Green Paper on Sustainable Energy (Department of Public Enterprise, 1999) advised that the cost of emissions should be borne by energy consumers. In addition, the Minister for the Environment and Local Government established a consultation group on greenhouse gas emissions trading to advise on options for trading both in Ireland and in the context of international agreements. This Group concluded that emissions trading should be used to the maximum extent, that the Government should oppose a 'concrete ceiling' that would place a limit on the proportion of emission entitlements that can be traded, and that Ireland should also participate in the Joint Implementation and Clean Development Mechanisms.

The most significant statement of the Government's intentions regarding ETR come in the National Climate Change Strategy (Department of the Environment and Local Government, 2000). This includes a number of proposed initiatives to eliminate the overshoot. However, the most relevant with regard to ETR is the plan to put a framework for greenhouse gas taxation in place from 2002 with the revenue recycled to reduce direct taxes and labour taxes and to support energy-efficiency measures, R&D and information and education programmes; partial tax-rebates are suggested for industries sensitive to external competition. However, research on the appropriate structure and magnitude of a carbon/energy tax is still lacking. This leaves the field open to the interest groups such as IBEC (the employers group) who have produced a report which presents such a tax in a very negative light. The Government has not carried out research to verify the figures in the report. However, in terms of whether the political climate in Ireland is moving towards environmental taxes in any form, some good news came when, in September 2001, it was announced that a tax of €0.15 on plastic bags would be applied from January 2002 onwards with the revenue placed in a fund to finance environmental projects.

Ireland is unusual in that it has a 'Partnership' approach to policymaking whereby a variety of economic policies such as tax and pay policy are agreed by the social partners (the government, employers organisations, unions, religious groups, the unemployed etc.) and the agreement is implemented over a number of years. Under the social partnership arrangements, the Government will have to persuade the employers groups, the unions and others to support energy taxes. The

2 Apart from an ambitious forestry programme to double the forest area announced in 1996. This involves planting 20,000 to 25,000 hectares per annum up to 2030. Although the primary goal of this programme is to develop a sustainable wood supply and processing industry, under the provisions of the Kyoto protocol, CO₂ 'sequestered' by forests established since 1990 is allowed as a deduction to the overall target. Following the Bonn Agreement (July, 2001), industrialised countries can use carbon absorption from forestry management activities up to a set limit in order to meet their emissions targets. Also, under the clean development mechanism, only sinks projects involving afforestation and reafforestation can be counted, up to a fixed limit.
major employers group, IBEC, unsurprisingly favours voluntary agreements. The unions, stung by the recently negotiated pay increases being eroded by high rates of inflation in 2001 caused by labour shortages and oil price rises, called for reductions in excise duties in order to reduce inflation. This view was taken into consideration in the Budget 2001 when duty on petrol was reduced. It remains to be seen if any agreement can be reached on energy taxation. A lot will depend upon the inflation rate and oil prices. If inflation stabilises, then environmental tax reform will be considerably easier. If oil prices fall, it will make it easier to increase taxes on fuel. However, the effect of such a tax on consumption would be minimal if it simply compensates for the effect of the oil price effect.

Results

The qualitative data from the Focus Groups and interviews is organised below according to Businesses, the Public and Policy Makers.

- Businesses
Eight representative businesses were interviewed. Most businesses seemed to be reasonably environmentally aware, in terms of general issues. This is probably as a result of being mandated to comply with Environmental Protection Agency regulations, Integrated Pollution Control (IPC) licences etc. All interviewees had an acute knowledge of their company's particular environmental issues and had taken steps to reduce their impact. Energy audits are part of the Environmental Management Systems in place in most industries, so between this and attention to bottom line figures, most companies had an accurate picture of their energy use. However, not all companies felt that they had done their utmost to maximise energy efficiency. Other factors can still be more significant, when, for example, buying new machinery. Companies who had been forced to examine their energy efficiency to comply with legally mandated standards, found a dramatic saving in money as a side-effect.

When asked about achieving national environmental protection, transport and individual car use was identified as the main culprit in the greenhouse gas problem, so reducing the number of cars or improving technology was seen as imperative. Improved household energy efficiency and building standards were recommended to cater for the domestically generated carbon emissions. Business respondents were aware that agriculture was an important source of greenhouse gas emissions in Ireland more so than in other European countries, so measures would have to be taken in this sector. The fossil fuel base and tardiness in exploiting wind potential was seen as another of Ireland's difficulty in meeting Kyoto targets. It was suggested that CHP, wave power and better technology should also be employed. Raising awareness of the issues and problems and generally improving consciousness regarding energy use was considered to be a condition for positive change to take place.
Awareness of ETR as a concept was quite low. About half the business representatives had heard of it in some incarnation, but were vague about it. The more energy-oriented companies were aware of the Climate Change Levy (CCL) in Britain. Reactions to ETR were mixed. Some people felt that, although economic instruments in general were a good way to change behaviour, recycling the revenue might negate these benefits as a revenue neutral initiative takes away the economic incentive. Other dislikes of ETR included the suggestion that tax is a blunt instrument, that elasticities of fuel are low and that the tax would have to be draconian to be effective, that it would have adverse equity effects amongst companies, negative effects on the competitiveness of firms, and that it would be regressive. The questions of trust in the government to actually recycle the revenue and to be administratively capable of such reforms was aired, and past failures cited. The employers group's (IBEC) negative position and the inflation rate at the time of the interviews were seen as significant impediments to ETR getting a fair hearing in Ireland.

In terms of how ETR would affect the company in question, most felt it might benefit them financially. However, the situation of power generation companies was judged by respondents to be more complicated as their markets would also be affected (adversely). The intentions behind ETR in terms of environment and employment were only partially understood, with people not focussing for very long on the implications. While opinion was divided on whether or not there is still room for increased energy efficiency in most industries, in terms of recycling revenue, rather than reduced labour taxes, improved technology grants and support of improvements in energy efficiency, subsidised energy audits and renewable energy were the most popular. Improvement in the energy efficiency of the domestic building stock and education programmes for schools and the general public at a community level were also advocated.

When asked how ETR policies might be improved, awareness raising was again stressed to help garner the support of the public and alert them to the connection between energy use and climate change. This could be done through schools, environmental training for politicians, workshops for the public and industry and community groups. Auditing and proof of revenue recycling on the part of the government was recommended to increase the trust levels. Finding an alternative word to ‘tax’ was seen as an important factor in selling ETR to the public. There was a good attitude towards the EPA and it was considered that their powers should be extended. It was felt that the tax should be introduced gradually to give companies a chance to adapt and to give the public a chance to accept it, and various companies felt that there should be exemptions for those hit the hardest and for the poorer sections of the public.

* The Public

The focus groups showed resoundingly that people were suspicious and distrusting of the government in relation to tax policy. Most people felt they were already overtaxed and that if an extra tax were put on energy they would be sceptical that it would be recycled. In most of the focus groups it was
difficult to get past this issue and get people to think laterally about the theory or philosophy of tax reform. When this was possible, e.g. in Focus Groups C and D, people did generally agree with the statements at the end of the questionnaire, i.e. that the polluter should pay etc. They were not willing to explain the dissonance between this and their attitudes to ETR proposals.

The overall reactions of the focus groups to any of the issues were in terms of personal impact. The general environmental awareness of the public was found to focus very much on high profile media driven areas such as waste management and recycling. People's interpretation of environmentally driven behaviour focussed very much on recycling as being the elixir of all environmental problems. Pollution in its broadest term was seen as an environmental threat, especially in relation to agricultural spillage and sulphates. Traffic and the increase in the number of cars was seen to be an environmental problem, but was not discussed as consistently as the waste issue. People in general were aware of environmental consciousness in other countries as compared to Ireland and frequently cited good practice from the northern European countries. Climate change was mentioned spontaneously, and sometimes confused with the ozone layer as were CFCs and greenhouse gases.

In relation to energy use, the focus group participants generally agreed that they could save more energy in their homes by paying more attention to switching things off, buying more energy-efficient appliances and insulating. To some extent, indulging in extra heat and electricity was seen as a deserved luxury. However, overall, the groups had taken measures to fit energy efficient devices in their homes - lagging jackets on hot water tanks, insulation, double glazing windows etc. There were mixed feelings about pricing of energy. Some people felt that increased cost would not affect their behaviour while others were more sensitive to their energy bills, but admitted that a change in behaviour would depend on how drastic the increase in cost was. Renewable energy was seen as a viable alternative to the environmental damage caused by over-use of energy, but it was difficult to get an answer from people on whether they would be prepared to pay more for cleaner energy.

There was no awareness whatsoever of ETR in any of the Irish focus groups. Once the basic premise of ETR was explained with examples of how it might work, responses were varied. A particular focus group would tend to take on a collective tone that would sway the individuals’ opinions. One focus group seems more open and potentially accepting of the ideas underlying ETR, but the others were quite negative. The more positive group felt the theory was a good one, but did express reservations about the practicalities, the cost of setting up such a system and the government's intention. Overall they felt that if it was as good as it sounded and was explained properly to the public it would be accepted.

In the other four groups the reasons for hostility to ETR included a lack of trust in the government (citing the failure to recycle road taxes to the roads as a reason for this distrust) and a reluctance to give an already rich government more revenue. Taxation itself is seen as an ineffective way to initiate change (with cigarette tax cited) and people see themselves as over-taxed already.
double taxation came up in most of the focus groups. In the 1970s, the largest political party, Fianna Fail, ran under a ticket of combining all the discreet taxes (property tax, water and waste taxes) under one income tax and subsequently implemented this; since then there has been a die-hard group seeing any extra rates or charges as rescinding of this agreement and being a double tax (despite the fact that income taxes rates have declined in the meantime). Th word 'tax' appended to any other word, including environmental, has very negative connotations.

An increase in the price level and higher inflation was a big fear. The participants were of the belief that bigger companies would simply pass on any increase in their taxes onto them, the consumers, and be able to write off most of it in a way that the ordinary tax-payer would not. Thus, ultimately, it would be the middle-income tax-payer paying all the costs. The scenario of businesses shutting down and relocating was also evoked. Regressivity was voiced as another objection to ETR, with concerns that the poorer, elderly and more disadvantaged elements of society would suffer most from such moves. It was not seen to be appropriate to compare Ireland to other countries in terms of ETR for a variety of implausible reasons!

The rationale for ETR was not very well understood. Most participants at some point saw it as some sort of pointless shifting of money from one place to another and were suspicious about this. Participants in general did not seem to understand the correlation between energy and pollution, and gave the impression of having missed the connection between energy use and climate change. The employment advantages of ETR were not accepted as they were seen as either unnecessary in the present economic climate or as implausible with job losses through factory closure and automation more likely. In general, it was difficult for people to make the connection between environmental taxation, energy use, reduced labour taxes and employment. All in all, participants did not seem to view the ETR scenario as plausible.

Education and awareness raising were amongst the areas highlighted by focus group participants as a means of making the ETR policies more acceptable. Lack of education and low environmental awareness were blamed for Ireland's lax record. Alternative revenue recycling made more sense to people such as grants for residential insulation, subsidised energy-efficient appliances, grants for the elderly etc. Subsidising renewable energy was also seen as an acceptable use of the revenue and the general consensus was that the money would be better recycled back into the environment somehow. More regulation, legislation, enforcement and higher standards were all seen as mechanisms for achieving national environmental protection.

No significant differences were found on the basis of the age, social class, or gender with regard to overall attitude to ETR although with such small numbers, any such findings would not be representative in any case. In general the environmental awareness of the groups tended to be focussed on the tangible, short-term local issues rather than the wider ones such as climate change. People are more likely to consider individual impacts as more salient than general environmental
impacts and they tend to think of themselves acting as individuals and how their actions related to the environment rather than society as a whole on anything but the broadest possible terms. Overall a lack of trust in the government and the current inflation and low unemployment are the main impediments to ETR in Ireland.

- **Policy Makers**

ETR was somewhat on the agenda in Ireland in the mid 1990s, but never came to anything and has not been subject to any real debate in recent years or budgets. The Department of the Environment and Local Government still has ETR on its agenda and introduces it annually in the budget discussions. However, the Department of Finance, which has the final word on any tax proposals, does not seem to have seriously considered introducing any ETR initiatives, partly due to a lack of convincing analysis and research on the subject by either department.

Amongst policy makers, there is the view that ETR may have stood a chance in the past, but in the present economic climate of low unemployment and high inflation, it will be very difficult to get on any government's agenda. The Minister for Finance was criticised by the Green Party for encouraging higher energy use and being reluctant to employ energy taxes, but this party has only 2 members of Parliament out of a total of 166.

Inflation was the biggest concern at the time of the interviews (early 2001) and, in all the interviews of policy makers, the view was expressed that the government is going to be very reluctant to impose any form of indirect taxation in the next couple of budgets. The OPEC oil price increases of 2000/2001 have added to the political difficulty of putting any more tax on fuel. The employment objectives of ETR are not seen to increase the attractiveness of the proposals at present.

There is a certain amount of disharmony between the various government departments, with the Department of the Environment seeing the Departments of Finance and the Public Enterprise as being the seat of opposition to energy taxes, and all departments disowning each other to some extent. The Department of Finance is depicted as being very conservative, reluctant to introduce new taxes and uncomfortable with the idea of hypothecation. Most policy makers in government who were interviewed in the course of this project, however, were supportive of the principles behind ETR, though less optimistic about their introduction. However, the policy makers from the partnership, i.e., the business lobby representative and the energy sector representative, were strongly opposed to any form of carbon tax and dubious of any advantages to such taxes even on a theoretical basis.

The competitiveness issue was a concern. The trade unions, which also form part of the social partnership, are strident in ensuring that inflation is kept under control, as they have seen recently agreed pay increases being eroded and thus have reversed their position of support of energy taxes.
The NGO influence on the debate seems to have been minimal. This may be the result of a lack of economic expertise in the NGO sector (and limited funds for such).

Public opinion, or the predicted reaction of the public, seems to be a reasonably strong factor in decision making. The public in general is seen to be against taxes of any sort, though some policy makers felt that the public might be prepared to accept environmental taxes in principle. However, those against ETR tend to be more vociferous (with protests etc.) and have a higher profile than those for or indifferent to ETR. The policy makers are also divided on the subject of whether or not taxes can effect behavioural change. The uncertainty of the elasticities in relation to energy and transport were mentioned. Overall, it is felt that public opinion will probably never drive ETR, but that an atmosphere of benign public opinion is a necessary condition for its introduction. The matter of public trust in the government was also raised.

It is felt that the European Union (EU) will be the strongest and most likely driver of any steps in the direction of ETR initiatives that will be taken in Ireland, with some feeling that an EU common tax policy will be a necessary precursor of Irish acceptance. However, others felt that ETR was no longer even on the EU agenda, but that the debate has moved on from taxes to issues like emissions trading. The fact that Ireland is very fossil fuel based and that wind generation is getting a slow start, with many planning difficulties, is seen as another reason why there is conservatism in the area of ETR. The OPEC price increases in 2000 made it even more difficult for the government to move on any sort of energy taxes and the energy intensive companies who would be hit the hardest have a strong lobby.

It is felt that the way to introduce taxes is individually and progressively with a significant degree of consultation with the social partners, and that there must be some compromises accepted with regard to their environmental and economic efficiency in the early years. Equity issues would have to be considered in the design to insure against regressivity, and viable alternatives provided, and the various business and worker representatives felt that exemptions would be necessary.

It was felt that, were a government to introduce such initiatives, it would have to be in its first year of office. The climate may be moving slowly and surely towards more environmental taxes, for example, the recent announcement of a plastic bag tax, but not perceptibly more towards ETR. However, with further progress with EU policies and other positive country experience, there may be more incentive. The potential for fines under the Kyoto Protocol is seen as a useful stick. If the popularity of the Green Party increases in the future, this could hasten the onset of ETR. Most policy makers felt that the eventual outcome would be a package of economic instruments complementing each other. This would help reduce energy consumption as well as encourage new technology and energy conservation measures.
Towards a Theory of the Impediments to ETR

The objective of this section is to pull together the qualitative data which emerged in the interviews and focus groups to identify the key social and political impediments to ETR. The results for the Irish study as presented above are compared with more general results based on four other European countries: Denmark, France, Germany and the United Kingdom. It is important to note that the data are generated using focus groups and interviews which are not necessarily representative of the populations from which they are drawn. However, the data are strong enough to allow hypotheses to be developed which might be tested further in representative surveys.

- Mistrust of government
A principal problem in selling the ETR concept to the general public is establishing trust that the government will honour its promises. In Ireland, this lack of trust is, most likely, based on recent events in public policymaking when promises from political parties have not been honoured and, indeed, political parties, once in government, have reversed their policies. Members of the general public, in particular, stated they did not trust the government sufficiently to recycle the money as promised. The necessity of auditing and proving that the revenue was recycled was suggested. In general people felt that the government would have to prove itself capable and committed to ETR and convince them of this before any reforms were introduced. This relates strongly to information asymmetries as an impediment (see below). This lack of trust in government was considered a key impediment in all countries. Even in Denmark, where ETR has been implemented, there was still scepticism about the government's intentions.

- Implausibility and hypothecation
A significant impediment to selling the ETR concept is making it seem plausible. As mentioned with regard to information asymmetries, the general public may not appreciate the environmental consequences of their actions and, therefore, not appreciate the rationale for an environmental tax or charge. These information gaps would have to be overcome before the much more difficult job of explaining the rationale for using the revenue to reduce labour taxes. Some of general public seem to view this as some sort of pointless shifting of money from one place to another and even the business interviews suggest a lack of understanding.

A large amount of the public's suspicion of the ETR concept relates to the issue of revenue recycling / hypothecation which is closely linked to mistrust of the government. At the time the interviews and focus groups were being held, Ireland was at the height of its economic boom with an unemployment rate of 3.6%. With significant labour shortages, there was little conviction regarding the necessity of reducing labour taxes on the part of business leaders or the general public. Allied to the lack of belief that such a recycling method would work and a lack of conviction that the government would actually recycle the revenue to reduce other taxes, the general public was in favour of recycling the revenue to

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3 We are grateful to the other teams in the PETRAS project for access to their results.
environmental projects. However, this may be partly explained by anecdotal evidence of a lack of understanding of the necessity for taxes to fund public goods and a desire to see the money spent where it is raised. It is a common complaint in Ireland that motor taxes are not spent on the roads!

Despite unemployment being a greater concern in the rest of Europe, this perceived implausibility and associated concern about revenue recycling to labour was common in the other four countries studied. All focus groups either did not trust that the tax would be recycled, did not think recycling would work, or did not make the connection between tax and recycling or some combination. In France, Ireland and the UK, it was stated that if revenue distribution was carried out by an independent body, this would increase trust. However, there would still be a concern about revenues being recycled for labour. However, it is important to note that the use of focus groups may condition participants to express a higher concern for environmental issues (the perceived principal concern of the groups) than for issues regarding unemployment and this may explain some of the desire to see revenues recycled to environmental projects.

• Information asymmetries

Policymakers, business groups and the general public all cited lack of public awareness of ETR as a major impediment to its political acceptance. However, an improved understanding of the environmental implications of everyday activity is required in the first instance. For example, there seemed to be a poor understanding of the connection between energy use, greenhouse gas emissions and climate change. In addition, it was the view of the focus groups that the Irish are less well informed about environmental issues than the Scandinavians and less concerned about environmental issues generally. The focus groups showed that people still see recycling as some sort of panacea to the world’s environmental problems. The public would be unlikely to support the introduction of an energy tax if they do not understand the environmental implications of using energy. The generation of a climate of support is necessary for political success in this arena.

• Political system

The composition of the parliament in a country and the relative strengths of the various parties have a significant impact on the success or otherwise of an ETR policy. In Ireland, a single-transferable voting system in general elections results in smaller parties having a greater representation than would be the case in a ‘first past the post’ system. In addition, it is likely that any government formed in the near future will be a coalition of parties. Given the current state of the Irish parliament, it is a distinct possibility that the Green Party may share power after the next election. This would undoubtedly increase the chances of ETR being introduced. A further complication in the Irish political system is the ‘Partnership’ approach to policymaking whereby a variety of economic policies such as tax and pay policy are agreed by the social partners (the government, employers organisations, unions, religious groups, the unemployed etc.). Were a significant environmental tax such as an energy tax to be introduced, it would have to be agreed by the social partners. Depending on the circumstances, this will be of considerable importance for whether ETR is successfully introduced.
(see Macroeconomic environment). Interestingly, unlike in the UK, France, Germany and Denmark, neither policymakers, business leaders nor the Irish general public raised the political system as defined above as being of great importance.

- Structure of government

Potentially, a major impediment to environmental tax reform is the structure of government. Responsibility for environmental performance tends to rest with the ministry for the environment. However, the finance ministry is usually responsible for tax policy. Irish policy makers stressed this was a significant impediment to the introduction of taxes and the issue was also raised in the business interviews. At the time these interviews were carried out, Ireland had a record budget surplus and low unemployment and so there was little enthusiasm on the part of the finance ministry to introduce politically unpopular taxes when it is the ministry of the environment which is responsible for ensuring compliance with the Kyoto Protocol. Nevertheless, it is interesting to note that, if fines are levied by the European Union for lack of compliance with Kyoto, it is the finance ministry which will have to find the money!

A major stumbling block is the unwillingness of the finance ministry to accept the principle of hypothecation as this may be a necessary condition for the policy to be acceptable amongst the general public. However, the blame does not lie completely at the door of the finance ministry as there has been a dearth of research on environmental taxes commissioned by the environment ministry and this has been a major stumbling block to convincing finance of the merits of such instruments. Overall, there is a distinct lack of objective research on which the government or the various departments (and, at time of writing, no economists in the Department of the Environment or the Environmental Protection Agency) can draw, and, although there has been a recent increase in the European academic literature on the subject, this does not necessarily filter down to the policy makers. Like in Ireland, the structure of government in terms of 'ownership' of ETR was raised as a particularly important issue by policymakers in Denmark, France and Germany but less so in the UK where the Chancellor of the Exchequer was seen to be personally committed to ETR.

- Macroeconomic environment

The economic conditions prevailing at the time of consideration of ETR as a policy instrument would be expected to play a significant role in the acceptability of ETR. At the height of Ireland's economic boom when exchequer receipts were at an all time high, the revenues from environmental taxes were of very limited interest to Irish officials. In addition, unemployment was low and, indeed, there were significant labour shortages so there was little interest in any employment benefits from recycling environmental taxes to reduce labour taxes even on the part of businesses. However, it should be noted that only a small number of interviews were carried out and it may be that SMEs, in particular, would have still had a major interest in lower labour taxes.
Inflation was also of particular concern given the knock-on effect of labour shortages and the increase in oil prices in 2001. While the largest union, SIPTU, was originally perceived as being sympathetic to the ETR, when inflation grew and wage increases were eroded, it called for reductions in excise duties on fuel. Such duties were reduced in Budget 2001. Given the Partnership (see Political System) approach to economic policy, it is highly unlikely that an energy tax could be introduced in an era of high inflation. Interestingly, some of the focus group members felt that, now that Ireland had finally made some economic progress, the present use of energy resulted in a deserved comfort! However, at time of writing, the world is facing a prolonged recession, Irish tax revenues are down and inflation is not a concern. While there will be a negative reaction to any new taxes in the face of an impending recession, ETR may provide a way for government to increase tax revenue or decrease labour taxes in an effort to avoid an increase in unemployment.

- Impact on competitiveness
Closely related to macroeconomic conditions are concerns regarding the impact of ETR on competitiveness. There is an enormous literature of the impact of environmental regulation on competitiveness. There is no need here to go into that literature as it is the perceived impact on competitiveness that is of interest to us here rather than the actual. The impact of ETR on competitiveness was of moderate concern to the general public, businesses and policymakers. Most businesses and policy makers seemed to feel that a gradual phasing in of ETR was essential. Businesses were anxious to get as much notice as possible about forthcoming policy initiatives that would affect their profit margins in order to have time to implement necessary changes. Interestingly, overall in the European countries considered, while competitiveness concerns were mainly an issue for policy makers and business groups, it was possibly even more important to the policy makers than businesses although it is important to note the small numbers of business people interviewed. In Ireland and the UK, there was a concern that environmental tax reform could lead to job losses rather than gains.

- Inequity between sectors
A concern regarding acceptability by business and the general public is the perceived fairness of the burden between different groups such as households, industry and agriculture. Prior to this study, a major bone of contention in relation to plans for an energy tax is that they see industry as baring the brunt as opposed to agriculture which produces a large proportion of Ireland's greenhouse gas emissions. In the interviews and focus groups, there was perception among policy makers and business groups that agriculture contributes to environmental pollution but, due to high political sensitivity, this sector cannot be touched. Interestingly the general public seems to prefer regulations rather than taxes as they believe that the incidence of regulation will land on industry rather than the consumer.

Overall, there was less concern about the potential inequity between sectors when compared with Denmark, France, Germany and the UK. In Germany there was concern that households were
unfairly charged compared to business and that they would subsidise businesses. In France, the exemption of agriculture and goods transporters was presented by energy intensive businesses as evidence of the government’s strategy to raise taxes with no environmental goals, and as evidence of the fallacy of ETR. In Denmark, both energy and labour intensive businesses regarded exemptions for energy-intensive industries as a necessary part of the policy, as did policy makers in Germany. This was not the case in the UK, where the businesses interviewed felt that exemptions were not appropriate and did not serve the environmental objectives of the policy.

- Regressivity
A major concern regarding the introduction of environmental taxes amongst policymakers and the general public in particular is their potentially regressive impact. Concern by focus groups was related to higher levels of tax, and it is difficult to say whether they were concerned with anything beyond this. The policymakers were concerned about how to 'sell' it to the public. This may be the result of the huge negative publicity Norman Lamont received when, as Chancellor of the Exchequer in the UK, he tried to introduce VAT on household fuel.

Across the European countries considered, there was no clear pattern. In the UK, 'poverty-proofing' proposals had been introduced, but there were still concerns among the focus groups. The impact on poor households was more of a concern in the UK than in Denmark. Distributional effects were considered not so important in Denmark because there was some faith in the social security system and in parliament to make sure that subsidies and measures to mitigate the impacts on poor people were in place.

- Elasticities and the level of the tax
There was a concern expressed that the level of any energy tax would have to be particularly high so as to induce a change in consumption and this led to concerns that the level of taxation would be punitive. Particular concern was expressed by the focus groups of the public. Generally, across the European countries considered in the project, ETR is seen as one more tax, when people are already paying enough. In Ireland, the level of taxation was highly important to policy makers as it was in Denmark. In the Irish case, this was related to the general economic climate and inflation (see macroeconomic conditions). However, in Denmark, concerns were expressed about existing high levels of marginal income tax and that business and households already felt that they paid high environmental taxes in general through waste and water taxes. This also relates to the issue of regressivity. In France, business groups said that the specificity of the 35 hours programme had been costly for them, and so tax would seem like a double burden. Even if they did benefit from reduced labour tax, there were still costs to the 35 hour programme, so ETR was seen as an additional cost.

- Terminology
Anecdotally 'tax' seems to have particularly negative connotations in Ireland. Thus, among the focus groups, any mention of the name 'ETR' became a problem. The principal problem seems to be that
the public does not see a tax as being a cost of using something. Therefore, 'charge' might be a better expression. The terminology used is also an issue in Germany and the UK. In these countries the combination of 'environmental' or 'ecological' with 'tax' put what is perceived as a 'good' word with a 'bad' word suggesting some sort of a catch! It is very clear that the name of the policy would have implications for its acceptability and perceptions of it.

- Inadequate marketing
Marketing, perhaps, has negative connotations as it might be seen as selling something that is not wanted. However, for an ETR policy to be acceptable amongst businesses it is likely that a marketing strategy will be required in order to address the information asymmetries and lack of understanding. In Ireland, prior to the interviews and focus groups, the respondents had virtually no awareness of ETR. Interestingly in Denmark, where ETR has been introduced, the focus groups had awareness of environmental problems and generally knew about changes to the Danish tax structure, but they still wanted more comprehensive information, and could not accept what they could not understand.

Conclusion

Environmental Tax Reform (ETR) is widely accepted to be a policy with desirable environmental, other economic effects. However, its implementation has been patchy. This paper examined the impediments to environmental tax reform. The principal potential impediments to ETR include: mistrust of the government, implausibility of the policy, means of hypothecation, information asymmetries, the political system, the structure of government, the macroeconomic environment, the impact on competitiveness, inequity between sectors, regressivity, elasticities and the level of the tax, terminology, and the marketing of ETR. An interesting finding is that it may be necessary to resort to second best approaches as first best approaches may not be politically or socially acceptable.

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References


Bonn Agreement on Climate Change (2001).  


Table 1. Some Economic Indicators, Ireland, 1990 and 1998.

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<th>Indicator</th>
<th>Annual Output in 1990</th>
<th>Annual Output in 1998</th>
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<tbody>
<tr>
<td>Real Gross Domestic Product (Index)</td>
<td>100</td>
<td>161.4</td>
</tr>
<tr>
<td>Real retail sales volume</td>
<td>100</td>
<td>139.8</td>
</tr>
<tr>
<td>Agriculture (Index)</td>
<td>100</td>
<td>103.0</td>
</tr>
<tr>
<td>Industry (Index)</td>
<td>100</td>
<td>202.7</td>
</tr>
<tr>
<td>No. of overseas visitors (Index)</td>
<td>100</td>
<td>175.5</td>
</tr>
<tr>
<td>Cars registered (Index)</td>
<td>100</td>
<td>168.3</td>
</tr>
<tr>
<td>New houses completed (Index)</td>
<td>100</td>
<td>221.9</td>
</tr>
<tr>
<td>Electricity output (Index)</td>
<td>100</td>
<td>143.0</td>
</tr>
<tr>
<td>Unemployment rate (% in 2000)</td>
<td>13.3</td>
<td>4.4</td>
</tr>
<tr>
<td>Total population (Index)</td>
<td>100</td>
<td>105.7</td>
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Source: Clinch (2001).

Figure 1. Business as Usual Greenhouse Gas Emissions, 1990-2010, and associated Target for 2012.
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