# 10 THE EFFECTS OF POLICY MAKING ON THE DESIGN OF ECONOMIC POLICY INSTRUMENTS: POLITICS AS USUAL

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## 10.1 Introduction

Three scientists are stranded on an uninhabited island. They do not have any food and they cannot return to the world of civilization. The engineer indicates that she is helpless: there are no tools available to build a boat. The political scientist is at a loss: she is not powerful enough to goad any others into action. The economist, however, cries out that he has the answer: let us assume we have the power to make the right equipment arrive, wouldn't the problem be solved?

This chapter is about economic policy instruments in environmental policy, focusing mainly on two types of economic policy instruments: charges and marketable permits. This type of policy instrument has recently once again become the focus of attention in the light of the debate on sustainable development (see Von Weizsäcker, 1994). The World Watch Institute advocated substituting, out of the total amount of income tax and company tax paid annually worldwide (7500 billion dollars), some 1000 billion of this by green taxes (Brown *et al.*, 1996).

Ever since the 1970s the regulating power of policy instruments has been the subject of much scientific literature, particularly in the field of economics, almost always leading to the conclusion that economic instruments such as charges and emissions trading have great potential to decrease the dilemma of choosing between ecological and economic interests. However, this debate long remained an exchange of theoretical arguments concerning the influence of instruments, in the blind assumption that these instruments would be politically feasible and applied completely and correctly to the policy target groups. Problems relating to policy formulation and implementation were largely ignored.

The fact of the matter is, however, that of the many different types of 'legal', 'communicative' and 'economic' policy instruments, the economic policy instruments are



*P.B. Boorsma et al. (eds.), Public Priority Setting: Rules and Costs,* 181-200.

the ones least used in practice (boundaries between these categories are fuzzy however; see Bressers and Klok, 1988). Of course there are examples of economic instruments in use, and which have been effective. Well-known examples in the Netherlands are the water quality charge (Bressers, 1995) and tax differentials for cleaner cars and unleaded petrol (Schrama and Klok, 1995). In spite of such good examples, the introduction of economic policy instruments in environmental policy looks most of all like an uphill struggle. Naturally, this makes environmental economists unhappy, as well as others who hold high expectations about this type of instrument.

Apparently the political feasibility of economic policy instruments in environmental policy depends on other factors than on the theoretical advantages to policy effectiveness, the cost of these instruments, or the good practical experiences in some sub-areas.

In this paper we look at the consequences these other factors have for the use of economic policy instruments. We are interested not just in the chance that such instruments will be chosen at all, but particularly in the consequences of the design of the economic policy instruments that are *actually* introduced. If there is one thing that is striking about the surveys of existing economic policy instruments used in the environmental policies of OECD countries (OECD, 1994), it is the fact that political decision making also has a major impact on the final design of the instrument. This means that there are two main differences between what many environmental economists advocate and what is actually accepted in practice. To begin with, environmental policy has relatively few economic instruments. Besides, the economic instruments that are introduced are often designed in such a way as to be unsuitable for actually realizing the expected cost effectiveness benefits.

The somewhat critical tone we are taking with regard to economic theory does not mean that it is wrong to assume that economic policy instruments can often yield 'more environment for less money' than regulations. If by means of regulation all firms are forced to consume or pollute less by the same percentage, the same could be achieved at a lower cost to society (or rather, at the same cost) if the firms where this is cheaper do more than average and firms with higher costs do less. Charges or marketable permits steer firms in this direction. If regulations go as far as to prescribe measures to be taken by each individual firm, there will be little incentive within these firms to think about ways in which the same can be achieved at a lower cost. This also affects the future: if money can be made by consuming or polluting less, this will stimulate a continuing technological innovation which will make environmental improvements in the long run better possible and cheaper. An example of this is provided by the increased fuel efficiency in cars ever since the oil crises. All in all, in theory economic instruments offer a high degree of cost-effectiveness, which suggests that using economic policy instruments can substantially lower the need to make difficult choices concerning the priority setting between ecology and economy.

As the often told academic joke at the beginning of this section indicates, however, in economic science much depends on assumptions, also if the issue is policy instruments (Anderson, 1994; Stavins, 1994). One such assumption underlying the picture of cost-effective economic instruments is that economic agents are 'utility maximizers'. Another is that they can be compared with very inflexible forms of direct regulation (cf. Peeters, 1992). However, these assumptions are not our subject at the moment; in this paper we want to look at another assumption, which actually remains implicit in many discussions of economic policy instruments, i.e. that economic instruments are also politically feasible in the policy-making process, that they have a good chance of being chosen in new policies.

In Section 2 we will describe some criteria which, in addition to cost-effectiveness, are important to the political feasibility of instruments in the policy-making process. Next we will indicate, in Section 3, the ways in which application of these criteria will cause economic policy instruments in use to deviate from the ideal-typical design which is usually assumed in theory development and the consequences of these deviations for the expected cost-effectiveness of the instruments chosen. We will use examples from OECD and East and Central European countries to offer anecdotal evidence. In Section 4 we try to provide a contribution to theory development on policy making with regard to economic instruments. Section 5 offers a conclusion.

## 10.2 Policy Making: Politics, as Usual

Priority setting with policy instruments cannot be confined to assessing the effect these instruments would have once put into practice. First a policy instrument will have to 'survive' the policy-making process, then it will have to be actually implemented, and only then can it have an impact on target group behaviour. Originally environmental economics, as far as policy instruments are concerned, focused almost exclusively on the impacts. The possible effects of financial stimuli on the actors' behaviour are studied, much attention being given to the application of stimuli which bring the set targets closer in a cost-effective way. Certainly in the beginning of the discussion about economic policy instruments, policy implementation and policy making were largely ignored.

Only rather recently was it realized that policy implementation and policy making matter. They bring to our attention, for instance, the role of the institutions involved in policy making, and the role of interest groups and other actors in the policy making process. Nowadays it is recognized by most economists that other requirements should be imposed on the instruments than just cost-effectiveness. Specifically there is a growing awareness of the importance of distribution issues in the policy making process and the transaction costs that accompany the application of the instruments. These issues are no strangers to economists. But, this development does not cover the full range of policy making. Within the OECD and within the staff of the American parliament, cookbook-style

manuals are still being written in which, in a more or less straightforward way, policy instruments are linked to certain problem situations or policy targets (OECD, 1991; US Congress, Office of Technology Assessment, 1995). Over the full range little attention is given to the effects of the political process and the bureaucracy on the design of the policy instruments which were introduced, leaving aside exceptions such as Hahn (1989) and, to a limited extent, the Dutch Council for Government Policies (WRR, 1992). It seems fair to say that in most studies or recommendations, policy making is seen mainly as the 'address' where recommendations are sent, and not as a necessary element of the field of study. Often this is combined with a large emphasis on the supposed cost effectiveness advantages. But certainly, cost-effectiveness is not the only criterion used by civil servants and politicians to explicitly or implicitly test proposals in policy making (Bressers, 1985: 51). Other criteria are, e.g.:

- effects on competitiveness at home and abroad;
- distribution effects: which group(s) are burdened with the costs of policy initially as well as at a later stage, i.e., after a possible translation into the prices of goods and services?;
- the implementability of the proposal: is a well-motivated and well-equipped implementing organization available?; are the costs of implementation on the part of the government and other transaction costs for both sides not too high?; what are the objectives and resources of the target group?;
- existing regulation and regulating traditions: does the instrument fit in with them or not?;
- flexibility of the instrument: the extent to which it can be adapted to different circumstances of time and place, and to uncertainties.

Please note that it is quite possible for a negative score on one criterion to co-exist with, or even be caused by, a positive score on another criterion. Besides, what is negative to one can be positive to the other, and priority setting in policy making is definitively a multi-actor interaction process.

Partly because of this, it is not just the actual properties of the instrument within its context that are of importance to the actors during policy making, but also their perception and evaluation. This also applies to an important criterion such as (cost) effectiveness. For the actors within policy making the visibility of this effectiveness is important. It can be shown that an increase in the price of petrol is certainly effective in the long run in reducing emissions from cars (see e.g. Sterner, 1990). However, if policy makers or the public at large do not believe this, since there often has been no reversal of the rising trend of the number of kilometers driven by car, this argument does not count for much during policy making.

In addition it is not just considerations with regard to these proposals that play a part during policy making, but also considerations concerning the question to what extent the development of the process weakens or strengthens an actor's position in view of other issues, whether simultaneously or later. Having a say in the debate on the introduction of

economic instruments may provide leverage for influencing other policy initiatives as well. Following in Machiavelli's footsteps, Deutsch said it already in 1970: 'power: a net and a fish' (Deutsch, 1970: 23).

All things considered, policy makers are rational in a different way than economists. It is not surprising, therefore, that when considering various alternative instruments, decisions are often taken which are not the optimal ones from the point of view of cost-effectiveness.

## 10.3 The Design of Economic Instruments in Practice

In this section we try to arrive at a summary of the effect that the policy-making process has on the final design of economic instruments. In other words, we do not take into account situations where no instrumentarium is used or where other instruments than economic ones are chosen. We only describe the differences between the ideal types which are usually assumed in economic theory, and the instruments which actually survived the policy-making process. We do this on the basis of our experiences in giving advice on economic instruments and on the basis of the available literature about the topic.

*1. Too low stimuli*

One of the first effects, occurring particularly in the case of charges, is that the level of this stimulus given by the instrument is hardly ever as high as it should be according to economic theory. This is largely due to the fact that most of the charges that are actually introduced formally are not intended to achieve a change in behaviour, but to generate revenues. An example of this is the Dutch fuels charge which replaced various lesser environmental charges in the eighties. Because revenues are the main purpose of many of the charges in OECD countries, they often also do not show a clear relation between the amount of the sum to be paid and the exhibited behaviour. Waste tarriffs for households, for instance, usually do not vary in proportion to the amount of waste that is produced.

Although the introduction of a number of environmental taxes in Sweden took place in a favorable political climate, and the charges that were imposed there are quite high, internationally speaking, these charges are still too low to accurately reflect environmental costs. The fact that the Swedish charges could rise to a relatively high level is largely due to strong public support for environmental policy at the time their introduction was being discussed, and also to the fact that a linkage was made to the reduction of a number of (income and business) tax rates (see Lövgren, 1994 and Sterner, 1994). The fact that this instrument was relatively unfamiliar to industry has also been pointed out.[1]

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[1] Telephone interview with K. Lövgren, MISTRA Stifteltsen för miliöstrategisk forskning, Stockholm, on september 1, 1994.

In brief: only under special conditions is it feasible to openly give charges an explicitly incentive character. Even in such cases the level of the charges is generally too low, however.

*2. Slow development to fully-fledged stimulus*

The new 'economic' instrumentarium is often based on the existing legal instrumentarium, and takes a long time to develop into a fully-fledged, market-oriented approach. This effect can be seen, for example, in the introduction of 'emissions trading' in the US, where first the exchange of emissions from different chimneys was permitted within the same firm, then the exchange between firms, and finally also the saving up of emission rights for later years. Because the design of the existing legal instrumentarium is not such that it can be easily transformed into a more market-oriented approach, it has aspects which impede the impact or even the implementation of the new approach. Such effects may also occur for charges intitially instituted as retributions. In calculating the Dutch water quality charge, for example, much attention was given at first to factors which did affect the cost of purification, but were not related to the firms' environmental behavior.

A trend noted by Hahn (1991, 49) is that after their introduction, charges in practice increase more strongly than inflation. In other words: in order to keep political resistance at a moderate level, charges have to start from an extra low level. The Dutch water quality charge, now one of the highest environmental charges in the world, was introduced gradually and at a very low level during the first half of the seventies. And even then it was only accepted because it was seen as a retribution for services rendered, i.e. water purification. The fact that this was linked to the expensive water purification process subsequently increased this charge more and more (Bressers, Huitema and Kuks, 1994). In that way it gained an exceptional degree of effectiveness (Bressers, 1988, 1995).

In brief: even when a choice is made in favor of economic instruments, it often takes a long time before they are given a design which enables them to make an optimum contribution to a cost-effective environmental policy.

*3. Earmarking of the revenues from charges*

The third effect is reflected by the way in which the revenues from charges are spent. In principle the most rational approach, economically speaking, is to treat these revenues no differently than other forms of government income, and to choose their most effective destination based on the preferences of the democratically chosen administration. In actual fact, though, they are quite often used to subsidize activities intended to reduce environmental pollution, such as major investments in, for example, waste processing and sewage water treatment. The charges are then earmarked, and are used to subsidize improvements in the behavior of target groups.

Policy makers have a strong preference for subsidies. Vermeulen (1994: 161) indicates that in Dutch environmental policy there is rising trend in the amount of money

involved in environmental subsidies. He estimated that in the Netherlands 20% of net environmenttal costs are covered by subsidies; even though subsidies are rejected on the basis of the 'polluter pays' principle. Moreover, the effectiveness of environmental subsidies can be called doubtful at best (Vermeulen, 1992; Van der Doelen, 1989). Howe (1991, 7), furthermore, finds that many subsidies are aimed at the introduction of so-called 'end-of-pipe' techniques, where pollution is not prevented, but only treated afterwards. These techniques are often not the most cost-effective ones. A high effectiveness expectation, therefore, is not the main reason for introducing environmental subsidies. In a study on American environmental policy in various states, Brierly (1992) even found that subsidies on emission reductions resulted in higher levels of economic activity in environmentally polluting sectors, when compared to direct regulation.

In brief: the way in which the revenues of the charges are spent is often not aimed at an optimum contribution to the policy target or the general good of society, but is aimed largely at making the charges acceptable by reducing the (re-) allocation effects as much as possible, whether or not this is the most rational way to spend this money, economically speaking.

*4. Allocation of valuable permits free of charge*

A fourth effect is seen particularly in the case of marketable permits and is closely related to the abovementioned effect on charges. When the trade in permits begins, these permits become worth money; i.e. they are valuable to a firm not only because they serve as a legal justification of the firm's behavior, but when a firm begins to pollute less they also serve as - sometimes valuable - trade goods. Firms that want to enter the market will have to start by buying the required permits from already existing firms. If the initial allocation takes place on the basis of actual pollution in a given year instead of on the basis of an equally strict pollution standard for all, free allocation also means that firms which already did their best in the past to reduce pollution as much as possible are disadvantaged as compared to firms which so far have invested little in the environment; a 'first remiss, now rich' effect (Bressers, 1985, 39-42).

According to certain interpretations of the Coase theorem it does not make any difference, from the point of view of cost effectiveness, how pollution rights are allocated initially. Nevertheless it will be clear that the allocation of pollution rights does affect income and other distributions in society (see also O'Connor in this volume). In this way forerunners are punished for their progressiveness. Because managers not only maximize utility, but are capable of humane reactions as well, such policies can have a discouraging effect. Furthermore, Stavins (1994) has shown that in a market with so-called transaction costs the initial allocation of pollution rights certainly does affect the market's efficiency. Transaction costs are costs that need to be made by market parties in order to find one another, to

gather information, to negotiate and take decisions, and to verify whether agreements made are being complied with.

In short: the dynamics of the politicy process cause perceived 'negative' allocation effects of tradeable permits to be likely minimized, even if this happens at the expense of the cost-effectiveness or fairness of the instrument.

*5. Limiting or supplementing direct regulation*

The fifth effect concerns the requirements imposed on the flexibility of the instrument. In the case of economic instruments it is imaginable that a concentration of pollution occurs in areas which are already strongly polluted. This is often described in the literature as a possible effect of tradeable permit markets, where all permits may be bought by firms in one single area. This is described by the term 'hot spots'. To prevent it from happening, mechanisms are incorporated which enable the government to intervene in the market. An approval procedure for an exchange of permit rights is standard for permit markets.

In the case of charges, too, politicians will want to have as much certainty about the time and place of the emission reductions as they think they have with traditional (non-tradeable) permits. The fact that this certainty is partly an illusion in the light of the failing effectiveness of many permit schemes (Schuddeboom, 1994) does not really matter. Usually, charges do not replace existing regulations, therefore, but remain in place as a 'safety net' or even, if the charge is officially just a destination charge, as the official policy instrument. From the perspective of an optimally functioning market system, many of these supplementary rules and procedures are impediments.

Often, approval procedures for trades between firms are introduced, which implies that firms willing to trade have to incur costs before trading. The existence of these so-called transaction costs considerably reduces the cost savings which could be realized. Less trade takes place than would be possible. Hahn and Hester (1989, 376) find that transaction costs constitute the main factor in explaing the success or failure of permit markets. In practice, this phenomenon is reflected mainly by the fact that the trade in emission rights takes place mostly between the branch offices of various firms, and hardly at all between the firms. In internal transactions the transaction costs are far lower. The limiting effect of transaction costs and uncertainty about cost-effectiveness depends, among other things, on the number of firms participating in the market (Stavins, 1994, 11). Summarizing, Hahn (1989, 51) concludes that cost savings from both charges and from marketable permits have remained 'far below their theoretical potential'.

Regulations not only affect the extent to which firms can save costs: the government may also have to incur considerable implementation expenses. Klaassen, for instance (1994, 5), speaks of the limited implementability of several permit markets. An approval procedure also entails uncertainty for the firms that wish to enter into a transaction.

Summarizing: economic policy instruments are rarely given the chance to create a 'free' market. Additional requirements and procedures, whether or not they are justified in

themselves, interfere with the economic mechanism that the economic policy instruments are supposed to realize.

*6. Limitation of the impact through full or partial exemption*

A sixth effect concerns the determination of the point of contact of the instrument. This includes two aspects: target group and the basis of the instrument. For certain reasons like their international competitiveness, firms may claim that they deserve to be exempted when an instrument is introduced at the national level. This limits the target group of the instrument and thus its scope, too.

After the introduction in Sweden of charges on energy and transport in 1991, a conflict arose between the environmental movement and industry. The environmental movement felt that industry was granted too many exemptions, while industry felt that the charges reduced competitiveness. In the end it was decided that industry would be exempted from the energy charge in view of its international competitiveness. This reduced the energy prices for industry to a lower level than that before the tax reforms (industry had obtained lower company taxes in return for increased environmntal taxes). So as not to increase the budget deficit, the charges for households and the transport sector were increased. In the Netherlands, too, the recent charge on energy consumption affects mainly private consumption.

As a matter of fact, a study by De la Fuente (1994) illustrates Michael Porter's well known ideas that it is too easily assumed that higher environmental costs automatically involve less competitiveness. Since the seventies the Netherlands have had by far the highest water pollution charges in the world, used to pay for waste water treatment. In other countries these costs are often paid out of the treasury. Of all branches of industry, the paper industry was probably the most vulnerable. It operates in an international market, its products generally do not have brand names, it initially produced one of the highest quantities of pollution in proportion to the size of the sector, and therefore it had to pay relatively high charges. All the same, though there were ups and downs, the Dutch paper industry did not fare all that badly during the seventies and the eighties. In Belgium water quality policy was initiated only at the end of the eighties. Thus the Belgian paper industry was able to economize both on the cost of the charges and on the cost of treatment measures during all this time. Yet the Belgian paper industry fared no better during the seventies and eighties than its Dutch counterpart. At the end of this period the competitiveness of the Dutch paper industry certainly did not appear to be any less than that of the Belgian one. There are indications that the pressure to which the Dutch firms were subjected led to their beginning to modernize more quickly. In other words: environmental taxes not only yield competitive disadvantages, they can also very well result in ecological modernization and, as such; in competitive advantages. It is not immediately clear in advance what the main factor is in a given situation. Thus the exemption of certain branches of industry not only hampers the impact of the economic policy instruments, it is also of doubtful use to their

competitiveness. However, the same applies here, i.e. that in the policy making process it is not just the facts that count but also, and to at least an equal extent, the perceptions of those involved in the process.

So basically, the criterion of (international) competetiveness leads to exemptions to businesses, which reduce the (cost) effecitiveness of economic instruments.

*7. Sub-optimal scale level*

As a seventh effect we may mention that environmental issues are not dealt with at the right level due to administrative hindrances. Williams and Matheny (1995) indicate that environmental policy in general is redistributive in nature. According to them, the implementation of redistributive policies will have to take place at the highest possible scale of government, because the target group of the policy can otherwise move from one jurisdiction to another to avoid the burden of environmental policy.

The emission of certain substances causes environmental damage not at the national, but even at the continental or global level. A problem here is not just that the existing government structures are not suited to an integral approach to problems at higher levels. In addition, individual countries often point out that the correct forum for the introduction of economic instruments is at the international level, but at same time there is a lack of willingness to propagate 'taxes' at the correct (international) level, because there is a fear of losing sovereignty to international organizations. Because of this it is difficult to decide about economic instruments at the supranational level. In spite of support from the European Parliament and the European Commission, the European Union was unable to arrive at a charge on $CO_2$ emissions (Liberatore, 1995).

To sum up: the existing economic policy instruments were introduced at the level where the most support was obtained. This is not necessarily the best level for an optimum market effect.

*Conclusion*

The conclusion of this section is that because other criteria than the optimalization of cost-effectiveness are applied during policy making, economic policy instruments have relatively little chance of being chosen. Moreover, if they are chosen, they are usually designed in such a way as to deviate in many respects from the ideal types of these instruments, which generally implicitly or explicitly serve as a basis for economic theory development.

Starting from this conclusion, one can proceed in three directions: one can moan about the lack of vision of policy makers who seem to be insufficiently aware of the enormous potential of economic instruments of control. One can also turn away completely from economic policy instruments as a serious option for environmental policy. Or one can admit that the subject of theory development about economic instruments cannot be meaningfully limited to the way in which citizens and firms are likely to respond to the

actually chosen and correctly applied policy instruments. We have chosen the latter course. In the next section, therefore, we make a beginning with supplementing theory development with the issue of policy making.

## 10.4 Theory Development about the Choice of Economic Policy Instruments

According to Andersen (1995), little progress has been made in the development of theories that describe and explain the choice of economic instruments. A standard response to the fact that the ideal-typical economic policy instruments are so rarely chosen is to continue to point out the supposed advantages of these 'products' , which is hardly any help to stimulate the introduction of these instruments. OECD 'cookbooks' for economic instruments are intended to promote their use, but they pass over the actual problem. The implicit assumption is made that government intervention can be seen as a conscious, well-considered treatment of choice by one central actor. However, this model is not a realistic one, as is shown by the political rather than informative role played by the decision making process surrounding the regulatory energy charge in the Netherlands, where scientific studies to reveal the effects of this charge were politically manipulated (see Jaarsma and Mol, 1994: 120).

Theory development about the choice of instrument is a highly complex matter; this is due mainly to the many factors which influence the decision making process. There is no contingency approach such as the one developed for the implementation and impact of policy instruments (Bressers and Klok, 1988; Klok, 1991). There are, however, many partial explanations of the choice of instruments. Traditions of the choice of instruments are mentioned, but also certain bureaucratic cultures (Andersen, 1995), various arenas are mentioned (De Savornin Lohman, 1994), institutional, procedural and structural obstacles are possible 'suspects' (see for instance Larrue, 1995), captive agencies, communist strongholds (Nentjes quoted in Sliggers, 1995), but also the influence of uncertainty about the effects (Opschoor and Turner, 1994: 33-37). To begin with, we want to pass over this multitude of partial explanations and look instead at a theoretically better developed approach from 'public choice', which offers points of contact to explain the phenomena we have observed. We will supplement this with ideas from policy science, including Sabatier's 'advocacy coalition' approach (1993).

*Robert Hahn*

In political economy the concept of utility maximization is a central one. The simplest policy development models assume that only one actor decides about the instrumentarium to be used, and that the instrument is chosen which maximizes its use to this single actor. More developed models also leave room for the influence of interest groups such as the regulated branches of industry and the environmental movement. Robert Hahn (1989,

1992) offers a relatively well-structured survey of the present situation, builds on existing insights by constructing a 'state of the art' model, and at the same time indicates the defects of existing theories. He assumes an essential contrast between the environmental movement and industry. Industry would be concerned mainly with profits and the environmental movement with the quality of the environment. Hahn assumes that decisions about instruments are taken by a single political actor, who pursues utility maximization and who for that reason is mainly bent on acquiring political support. This political support can be obtained by the actor by choosing those objectives of environmental policy which most appeal to both interest groups. Hahn shows that the optimum of political support is located wherever stricter targets are applied to new firms, and more lenient rules applied to existing firms.

Hahn goes on to assume that in essence, instruments differ as to the extent of their market orientation. Generally speaking, industries will prefer market-oriented instruments over direct regulation because they involve lower costs to the industry; the more influential an industry is, the more often a choice will be made in favour of this type of instrument. Furthermore, industry prefers a lower stimulus to a high stimulus, while the reverse holds for the environmental movement. Both have in common that they feel that the earmarking of the revenues of charges is an attractive option: the environmental movement because they are in favor of an adjustment of environmental taxes; industry because the earmarked revenues are a sign of its efforts with respect to the environment. This means that when a charge is introduced, it will soon yield earmarked revenues. Furthermore, Hahn discusses the visibility of the cost of the instrumentarium and the importance of symbolic politics. Politicians generally tend to prefer instruments which entail little visible cost to industry and which appear to stimulate employment. Economic instruments score badly on both counts, because they entail rather visible extra costs for industry and offer few visible positive effects on employment. Hahn also models the importance that may be attached to symbols by interest groups. He assumes that the environmental movement is even in favor of symbolic policies, because such policies easily set unrealistically high targets, which can, however, be utilized in the long run as a basis for demanding ever stricter policies and which, moreover, can enhance the perception of the environmental problem on the part of the general public.

On the basis of the model outlined above, we can explain a number of the effects we observed of the policy-making process on the design of economic instruments. The overly low stimulus (effect 1) can be explained from the resistance on the part of industry. The same applies in part to the earmarking of the revenues of charges (effect 3), at least if this concerns earmarking on behalf of subsidies. The fact that marketable permits are generally allotted free of charge (effect 4) can be understood from Hahn's conclusion that old firms will be priviliged with respect to new ones ('new firms don't vote'). The fact that all sorts of supplementary regulations remain in place (effect 5) could be explained on the basis of the interest that the environmental movement is supposed to attach to the symbolic

aspect of the policy. We find this explanation only partly satisfactory, however. The providing of full or partial exemptions (effect 6) may be partly due to the general resistance on the part of industry and partly to the fact that existing firms are given priviliges.

It is more difficult to see from Hahn's model why economic policy instruments would develop so gradually in many cases (effect 2), why government expenditures are often financed through charges and not even more often through subsidies (which after all would make not only the politicians happy, but also industry - sub-effect 3), partly why so many supplementary rules continue to exist when an economic instrument has been chosen (effect 5), and why a higher scale level is so often not feasible (effect 7).

As compared the model of policy making as a process of choice of a single actor who only pursues a maximum cost-effectiveness of the policy, Hahn's model is a more realistic one because it takes into account the political actors' own rationality and that of others involved in the policy-making process and not just an 'external' and normative rationality, i.e. looking for cost-effective solutions for society as a whole. Also, the introduction of the possibility that a policy can be purely symbolic is interesting and rarely seen elsewhere, although it can be quite a quite realistic and rational one from the politicians' perspective (see Gustafsson and Richardson, 1979).

Yet theory development on the choice of instruments in the public choice approach, in which Hahn's work can be seen as the 'state of the art', has a number of limitations, which are partly also recognized by the author himself. They are the following:

(1) there is too much simplification of reality by limiting the number of parties involved in policy making to a single decision maker, who lets himself be influenced by only two interest groups, each of which has only a few motives;
(2) too little attention is paid to the learning effect of experiences in the past with certain types of policy instruments;
(3) too little attention is paid to the institutional component of policy making.

*Diversity of those involved and their motives*

For all three of the defects we have identified, interesting supplements can be found in the literature. To begin with the first item: empirical research by Svoboda (1992) in a study on the influence of several groups on American air quality policies shows that at least four groups had an influence on environmental policy: the bureaucracy, the environmental movement, industry and political elites. According to the 'captive agency' theory the influence of industry would have to be a major one, but Svoboda's study shows that it is only marginal. The role of political elites and the bureaucracy, which is largely ignored in Hahn's model, is striking, however. It does not seem wise, therefore, when developing theories on policy making, to limit complexity by reducing the number of actors in the analysis (viz. Allison, 1970). A large number of actors or factors in the analysis, on the other hand, quickly makes it impossible to arrive at a predictive model (Bressers and Klok, 1988).

A possible solution, not to limit the number of actors in the analysis and still construct a controllable theoretical framework, is to place the actors in a limited number of 'coalitions' (see also below). This approach was chosen in constructing a sub-theory about the relation between the nature of policy networks and the choice of instruments by Bressers (1995).

Supplementing the model with other actors involved and their motives makes it easier to understand the use of the revenues from charges in financing government activities (sub-effect 3). Bureaucracy in particular is interested in a high level of activities (cf. Niskanen), and the revenues from charges offer opportunities in this respect, which are all the more interesting because many other tax tarriffs have been subject to pressure since the eighties. The example of the Polish mining sector in which subsidies were not just a response to general resistance from industry but were precisely intended to influence the allocation between various industries, also becomes easier to explain by assuming the actually existing coalitions in the policy making game instead of categories such as 'industry' or 'the environmental movement'. Also, full and partial exemptions (effect 6) can be partly reduced to such differences between various groups of firms. Limiting or supplementing regulation (effect 5) can be partly understood as an attempt on the part of the bureaucracy and political elites to limit the loss of capacity to directly influence the behaviour of firms which accompanies the use of general economic instruments.

*Learning effects*

Our impression is that existing theories pay little attention to learning effects. Such a learning effect can be observed quite often in practice however. One example is the system of marketable permits which was set up recently in the US with respect to acidification. Under this system, part of the pollution rights is not allocated among the existing polluters, as was done before, but is sold annually by public auction. The gradually increasing introduction of market elements in the US 'emission tradings' programme itself can be seen as a learning effect. Furthermore, following the US the concept of 'emissions trading' is now being considered and applied in other countries as well. Another observation is the level of charges that are applied are often adjusted regularly to maximize environmental impact.

A theoretical framework that is suitable for the study of policy changes is Sabatier's 'advocacy coalition' approach (Sabatier and Jenkins-Smith, 1993). This approach sees changes in policy as being a function of; (a) the interaction of competing coalitions in a sub-system of the political system and; (b) external changes, such as changes in the socio-economic situation; against a background of (c) a number of stable parameters, including constitutional rules. This theoretical framework is based on the assumption that decisions about certain policy fields are taken within sub-systems of the political system, and that within such a subsystem coalitions are created which oppose one another. Here coalition formation is based on shared values, shared problem perceptions and shared causal assumptions. Coalitions are bent on manipulating the rules that concern government

institutions. These government institutions are the vehicle, as it were, that the coalitions want to use to achieve their aims. Coalitions try to obtain this influence in three different ways; (a) by gathering and using information; (b) by manipulating in the forum where decisions are being taken; and (c) by supporting politicians who sympathize with the coalition. Here policy changes can be realized by means of compromise, through external changes which may change the resources of actors, through policy experiments and policy evaluation, and through changing insights within the coalitions. Particularly the gathering of information and learning from past experiences are seen as a driving force behind policy changes.

The way in which this learning occurs can depend on other factors. An interesting idea in this perspective is the thought that the policy style of the Environmental Protection Agency (EPA) in the US may well have been a decisive factor underlying the introduction of economic policy instruments. Vogel (1986) has shown that this agency functioned in a very bureaucratic manner, with extremely little room for consultation and a highly formal attitude. This forced firms to go to a great deal of expense, and there was a high stimulus to obtain more freedom of action. A similar process can be seen in Poland, where the energy sector wants to get rid of interference on the part of the local authorities, and is advocating a permits market at the national level.

Differences in policy styles may also serve to partly explain the lack of interest in economic policy instruments in Europe. In European countries such as the Netherlands the dominant policy style in environmental policy has more of a consensus orientation (Huitema and Van Snellenberg, 1995). Many of the possible cost benefits of economic policy instruments in the US are already being realized in various European countries through wider negotiations during the permit procedure.

Learning effects can have not only a positive or negative impact on the chance that economic instruments will be chosen, but also on their eventual design. This is reflected particularly in the gradual growth of the instruments towards more adequate economic stimuli (effect 2). This perspective also makes clear why such policy improvements are a slow process which requires all kinds of factors together to be sufficiently positive to bring about a shift in policy.

*Institutional factors*

In the above we have already briefly indicated the third item: the lack of attention given to institutional factors in existing theories on policy making. Although this factor is mentioned in many partial explanations of the choice of instruments (see e.g. Larrue, 1995), it is rarely incorporated in more extensive theories on policy making. Majone, as early as 1976 complained that many theories on policy making do not take into account the attempts made by actors to change the institutions within which they operate. The 'advocacy coalition' concept leaves more room for this. A possible addition to existing theory development can be found in work by Ostrom and others (Kiser and Ostrom, 1982; Ostrom, 1990; Tang,

1992). This approach also combines well with the analysis of interaction processes (Huitema, 1993).

The approach is based on the concept than institutions can be seen as rules, and that institutions have a layered structure. There are at least three levels of rules which can influence the actions of actors who oprate within set regulations: the constitutional level, the collective level, and the operational level. The actions of actors at these levels depend on their motives and resources (viz. Klok, 1993). The rules that determine decision making at the level in question, however, limit the amount of latitude that the actors have. Other limiting factors are the culture of the society and physical circumstances. Together these factors determine the so-called arena of action in which the actors find themselves.

Particularly the introduction of several levels of regulation and arenas appears to constitute a good addition to existing theories about the choice of economic policy instruments. De Savornin Lohman (1994) points out that the choice of economic policy instruments often takes place in other arenas than the choice of legal instruments. The nature of their subject matter means that their choice often involves other actors, such as the Ministry of Finance. These actors may introduce motives that are not favorable to the selection of economic instruments. An example of such a value is the pursuit of fiscal neutrality. Precisely because the rules of the game have a layered structure and vary for each arena, actors may also try to manipulate this. Under the rule of fiscal neutrality, the chance that economic instruments are adopted is not very high. Not just the game but also the rules of the game can be manipulated, such as the rules about which actors can join in the game, and about the role the actors can fulfil. This means that theory development about policy making should be open to the rules of the game at the various levels.

Supplementing this with the institutional perspective provides more insight into the question of why the growth towards 'real' economic stimuli (effect 2) often happens so slowly: there are many formal and informal rules that need to be changed. Besides, the impact of the instrument often affects institutions that are used to pursuing fiscal neutrality rather than a maximum behavioral effect. Something similar applies to the existence of many limiting or supplementing regulations (effect 5). Part of these regulations did not result from the process that led to the choice of the economic instrument, but were already present as a result of previous decision making, sometimes even as a framework which had to be adhered to during policy making. In Europe, the limitation of the impact of the instrument (effect 6) is partially caused by the fact that agreements had already been made with various branches of industry about the reduction of environmental pollution, in which case high charges are seen as violating the principle of legal security. Finally, international covenants and supranational organizations may provide a basis both for economic instruments and for their realization, or hinder the choice of the optimum scale level (effect 7).

*Perspective*
When observing the deficiencies of existing theories concerning the choice of instruments, and possible supplements to these theories from policy science, we may conclude that a combination could yield interesting results. Particularly work by Sabatier and by Ostrom appears to offer good opportunities for an elaboration of such theories. Here the basic principle might be that the choice of instruments at the operational level is influenced not only by the features of the problem situation and the basic conflicts of interest with regard to the problem and the way it is handled. There is a multitude of actors involved with different motives who 'learn by doing'. Thus the context of decision making is not seen as immutable. Actors who are involved in decision making also try to influence the 'rules of the game', for instance by demanding to be admitted to the decision making arena. In addition the actors play the 'game' within the arena where decisions have to be taken about the introduction of the instrumentarium.

## 10.5 Conclusion

This chapter started with the observation that economic instruments are in theory very attractive due to their cost-effectiveness. That high degree of theoretical cost-effectiveness suggests that the need for setting priorities in the choice between ecology and economy can be substantially minimized, because these instruments can make it a less conflicting choice. However, in policy making more criteria are taken into account. Because of this the design of economic instruments often does not satisfy the ideal model outlined in environmental economics. Various types of effects may be distinguished; including effects on the level of the stimulus applied by the instrumentarium, the direction of the stimulus applied, and the target group at which the instrumentarium is aimed. The consequences of this are that the economic instrumentarium does not satisfy expectations. These expectations are often not realistic, because they assume an ideally designed instrument which imposes few limitations on market influences. Basically, theory development about the choice of instruments is still faced with a number of difficulties which were also noted already in the seventies. Particularly the fact that the institutional component is largely ignored does not help the level of realism of these theories. Better theory development could well be based precisely on the institutional context of decision making.

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