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climate policies: an integrated theoretical framework**

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**BARRIERS TO THE INTRODUCTION OF MARKET-BASED INSTRUMENTS IN CLIMATE POLICIES:  
AN INTEGRATED THEORETICAL FRAMEWORK**

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**Abstract**

Although economists have usually defended the superiority of market-based instruments, and an increasing use of those measures in OECD countries has taken place, there has been (and still is) some reluctance by policy makers to use them for climate policy. The aim of this paper is to provide a theoretical framework which allows the explanation of this paradox. This framework combines standard environmental economics reasoning with two economic approaches: the institutional path dependence and the public choice perspectives, complemented with some insights from political science studies. Ex-post empirical research using the Spanish case illustrates the accuracy and policy-relevance of our approach. Analysing the barriers to market-based measures in climate policy may allow us to draw lessons to facilitate the implementation of these instruments in the future.

**Key words.** Climate policy, Public Choice, Institutional Path Dependency, Spain

## 1. Introduction

The literature on environmental policy instruments in general and climate policy instruments in particular has traditionally been based on a distinction between command-and-control (CAC), market-based (MBI) and non-mandatory instruments. The former impose legal obligations to adopt a certain technology (technology standards) or stay below a certain emissions level (emissions standards) which fall equally on all the firms in a sector, irrespective of their abatement costs. In contrast, MBIs (including taxes, emissions trading and subsidies) provide some flexibility for firms and encourage greater abatement by firms with lower abatement costs (and proportionally lower abatement by firms with high abatement costs). Finally, non-mandatory approaches encompass voluntary/negotiated approaches (with or without involvement of regulatory authorities) and environmental information gathering and provision. Instruments can also be located along a continuum from the least to the most coercive for those regulated. Non-coercive (soft) instruments include non-mandatory instruments and subsidies, whereas coercive (hard) instruments encompass CAC and MBIs (taxes and emissions trading schemes, ETS). These are either highly prescriptive and enforced coercively (CAC) or put a price on emissions, involving a payment (i.e., MBIs, excluding subsidies<sup>1</sup>). Moreover, the “softness” of instruments may not be related only to a particular instrument, but also to its stringency. Therefore, hard instruments can be made softer or harder. For example, regulatory standards can be lenient and the environmental tax rate can be low<sup>2</sup>.

The aim of this paper is to provide (and test) a theoretical framework which allows us to explain why soft instruments are more attractive than hard instruments for climate policy. We also try to explain why, within the “hard” category, there has been (and still is) some reluctance by policy makers to use MBIs for controlling air pollution, despite the fact that economists have usually defended their superiority (see e.g. Baumol and Oates 1991) and OECD (2003) shows an increasing use of those measures.

This framework combines standard environmental economics reasoning with two economic approaches: the institutional path dependence and public choice perspectives. This is further complemented with some insights from political studies. Ex-post empirical research using the Spanish case illustrates the accuracy and policy-relevance of our approach. This is not the first paper explaining why MBIs have often been rejected in climate

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<sup>1</sup> Therefore, in the rest of this paper, the term “MBI” will be used to refer to emissions trading and taxes.

<sup>2</sup> If soft instruments are defined as non-coercive or non-interventionist, then subsidies should belong to this category. OECD (1994) narrowly defines economic instruments as measures which use financial incentives to encourage more appropriate environmental behaviour, excluding subsidies, liability and administrative charges. Other authors, however, include all MBIs under the “hard” category such as OECD (2004), Oosterhuis (2006), Gunningham (2007) and Herbert-Copley (2007).

policy in spite of their alleged merits but it is the first one to integrate different approaches that may explain this phenomenon.

The analysis carried out by environmental economists on environmental policy instruments has underestimated the barriers to the implementation of cost-effective policies and measures, probably because the analysis has usually been undertaken in an abstract setting without considering the real-world aspects and problems. This calls for more empirical studies that show the real-world difficulties in introducing MBIs in order to draw lessons for the successful implementation of those instruments.

Accordingly, this paper is structured as follows. The next section develops the theoretical framework, which integrates the Institutional Path Dependence and Public Choice approaches complemented with more standard Environmental Economics approximations and some insights from political science studies. This conceptual framework is applied to the case of Spain in section 3. The paper closes with some concluding remarks and policy recommendations.

## **2. Analytical framework**

The discrepancy between the alleged merits of MBIs and their lack of real-world implementation in some countries should be analysed. In order to do so, an integrated theoretical framework is sketched. We next present the main findings of each approach regarding the barriers to the use of MBIs in climate change policies.

### ***2.1. The environmental economics literature***

Despite being a major and early finding of environmental economists, the actual use of MBIs was a rarity until the early 1990s. Only small-scale applications, often with an experimental nature, could be seen before. The first ambitious scheme took place in the US with the building of a national market for sulphur dioxide permits (acid rain program), clearly influential for the future European Union ETS (EUETS) and probably related to the popularity of free-market ideas at the time. Almost simultaneously some Scandinavian countries implemented their first green tax reforms, following the traditional European preference for this MBI. Although such tax reforms were also explained by the growing concerns about climate change issues and policies, they mostly responded to far-reaching tax reform trends and needs, and to the collateral fiscal advantages of carbon taxes (Gago and Labandeira 2001). Moreover, green tax reforms have usually been restricted to an overall increase

in energy-related taxes to final consumers in order to protect industries from competitiveness losses (see e.g. Ekins and Speck 1999)<sup>3</sup>.

Several environmental economists have followed political economy thinking to observe that the implementation of MBIs is controversial and commonly rejected by those regulated<sup>4</sup>. The main reasons given for the dominant adoption of CAC instruments in environmental policy are: i) An apparently more direct and immediate effect on the environment (effectiveness); ii) Its better adaptation to the “legalistic approach” dominating public policy; iii) The business sector supports CAC instruments given their perception of a greater stability and the possibility to reduce compliance burdens by negotiating with regulators (i.e., they are more prone to manipulation and regulatory capture); iv) The negative social assessment of MBIs, which were perceived as the “selling of a social good” and their (perceived) negative distributional effects. Moreover, the alleged superiority of MBIs versus CAC might have been exaggerated by the theory, which usually compares ideal market-based regulations with CAC eroded by their implementation.

Indeed, the preceding factors have constrained the application of theoretically well-developed regulatory proposals. For instance, Tietenberg (2005) notes that efforts to implement different MBIs in Poland and Germany never materialised. Kelman (1981) and Cook (1986) provide early empirical analysis of opposition to pollution charges and ETS in the US. In many other occasions, the design elements of the adopted instruments are very different to those recommended by the environmental economists themselves, as observed by Pearce (2006) for the UK Climate Change Levy (Pearce 2006) or by Gago et al. (2007) for MBIs in Spanish regions. Michaelowa (2004) showed that, where ETS for GHG were applied, the schemes were either limited in scope with many exceptions (Denmark), low safety valves (Denmark), voluntary (UK) or contained a subsidy combined with it to make it more palatable (UK).

Environmental economists have tried to explain the problems encountered by ETS in actual policy making. For example, Egenhofer (2003) considers that, with CAC (standards) public authorities have a greater ability to hide the total costs of climate policy and their distributive impacts than with an ETS. Tietenberg (2005) observes that the adjustment costs of implementing a new system with which regulators have limited

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<sup>3</sup> Actually the applicability of one of the few sizeable environmental taxes levied on producers in Europe, the Swedish tax on nitrogen oxides by electricity producers, was possible due to a scheme that returned the revenues to taxpayers following their share in production (Sterner 2003). Thus some softness was introduced in a hard environmental policy instrument to grant feasibility.

<sup>4</sup> The political economy approach begins with the political nature of decision-making and is concerned with how politics will affect economic choices in a society (Drazen 2000). It emphasizes the interaction of economics and political reality and explains the gap between theoretical ideals and practical reality (Pearce 2006). Thus, the actual policy outcome may vary, often substantially, from the economic optimal design because of the need to meet other interests which conflict with economic optimality (Oates and Portney 2001).

experience are usually perceived as very high, except if the new system leads to visible, short-term benefits, which is not the case of climate policy.

Yet, the British experience provides an apparent exception to the constraints for MBIs in climate change policies. UK regulators had been receptive to the use of these instruments in environmental policies since the mid 1990s, partially in response to academic work in the field, e.g. through the yearly automatic increase of fuel taxes above inflation, although with relevant distributional restrictions that reversed further increases in energy taxes. In the case of climate policy a wide and complex scheme integrating soft (basically voluntary agreements) and hard instruments (an ETS with a clockwise auction and the climate change levy in a green tax reform fashion) was devised in the early years of this century to fulfil the ambitious internal goals for abatement. However, Pearce (2006) shows that the final outcome of the regulatory package was less effective in reducing emissions and less cost-effective than the theoretically optimal design as a result of the interactions of various sets of special interests, illustrating the barriers to the actual implementation of MBIs.

Overall, standard environmental economists mostly rely on an ad-hoc approach to analyse these issues. The following approaches provide an analytical framework which can be used to identify the barriers to MBIs.

## *2.2. Special interest politics: Public Choice*

The choice and design of environmental instruments is clearly influenced by the policy process and the pressures of different stakeholders and it might deviate considerably from the theoretical "ideal type" of the instrument (Oosterhuis 2006). The literature on special interest politics allows us to grasp those influences and pressures.

Starting with Olson (1965), the economic literature on special interest politics analyses the mechanisms through which special interest groups affect public policy in democracies. Theoretical tools are developed to study the interaction among voters, interest groups and politicians. It is generally assumed that they act on their own self-interest and that political outcomes are the result of this interaction (Laussel 2006). From the first models which focused on the electoral process in a rather static manner, the literature has evolved to the analysis of the multi-dimensional character of the policy conflict derived from the search for benefits for their own group by special interests at the expense of the population as a whole (see Persson 1998 and Martinot 1999, for example).

The potential importance of interest groups in environmental policy design is stressed by several models in the political economy literature. In their review of the topic, Oates and Portney (2001) observe that a promising theoretical literature has emerged that provides models of the political interaction of government with various interest groups in the choice of regulatory instruments. A large empirical literature supports such models, finding evidence of the influence of interest groups.

A classification of these models is provided by Angers et al (2006). Rent-seeking models describe how interest groups compete for group-specific rents (Tullock 1980), specifically in the context of environmental instrument choice (Dijkstra 1998). In *Probabilistic-voting* models lobby groups exert influence on the policy maker through the votes of their members (Coughlin 1992). *Models of information transfer* are based on exchange of information between interest groups and policy makers, on which the politician bases her decisions (Grossman and Helpman 2001). *Political-support* models assume that policy makers undertake decisions in order to maximize their political support. They reflect a *common-agency* problem where principals (interest groups) influence decisions of agents (policy makers) through donations to election campaigns (Grossman and Helpman 1994; or Aidt 1998 for specific applications to environmental policies).

Public Choice is one of the three approaches of special interest politics, together with the Chicago School and the normative approach (Martinot 1999)<sup>5</sup> and the only one of all three which has been applied to climate policy making. Public Choice is the application of economics to political science (Mueller 1989). Decisions made in the political arena are taken for the collective provision of a public good. Climate policy is specially fit for analysis through a Public Choice approach because the abatement of global warming is the paradigmatic example of a pure public good which can only be provided through collective action (Svendsen 2000). Public Choice can be used to analyse the factors influencing the political mobilisation of interest groups affected by climate policy (Svensen et al 2001).

A major feature of the Public Choice approach is "lobbyism". Special interest groups lobby for special governmental favours. Thus, the final outcome and design of an environmental policy depends on lobbying by interest groups, which leads to the formation of coalitions between firms with the same interests (Svendsen 1999). Climate policy reflects the interests and balance of power between different stakeholders. Public Choice theory has already been used elsewhere to analyse environmental and climate policy issues, including the following:

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<sup>5</sup> Relevant references of this literature are: Chicago School (Stigler (1971) and Becker (1983)), the normative approach of Laffont and Tirole (1993) and the Public Choice School [Buchanan (1980) and Grossman and Helpman (1994, 2001)].

Michaelowa (1998) applies a Public Choice framework to analyse pre-EUETS European climate policy. It notes that, while the EU has been a leader in the international climate negotiations, it has not been able to implement strong policies to reduce emissions. This discrepancy is explained by analysing the activities of interest groups and their influence on EU institutions. He concludes that, although the institutional allocation of responsibilities favours ambitious targets, interests hostile to climate policy have a stronger influence and are able to prevent "harder" instruments that might lead to real emission reductions.

Schneider and Volker (1999) analyse the behaviour and interests of voters, politicians, interest groups and bureaucracies and show that there are conflicts with other policies and that individual rationality is a powerful obstacle in implementing MBIs. The preference of CAC over MBIs is shared between firms and policy-makers because: 1) emissions behind the limit are free of charge, which is not the case with taxes or auctioned permits. 2) Standards are easier to manipulate than MBIs. 3) Standards can lead to market entry barriers. Policy makers prefer CAC because it requires more administrative controls and it is more resource and labour-intensive than MBIs, increasing their budget and influence. When choosing a climate policy instrument, policy makers try to minimise conflicts with firms, while passing the costs to the great majority of ignorant and uninformed voters (i.e., consumers and/or taxpayers)<sup>6</sup>.

Svendsen (1999, 2000) bases the design of MBIs on a Public Choice analysis of stakeholders' interests in the US and Europe, suggesting that a grandfathered CO<sub>2</sub> permit market is more effective than a CO<sub>2</sub> tax in relation to organised interests such as industry and electric utilities, whereas taxes are better regarding badly organised polluters, with a weak lobbying power, (households and the transport sector).

Finally, Lane (2004) analyses the political economy of US GHG controls. She finds out that even modest controls face formidable political challenges. The opponents of emission controls hold great organisational advantages over the proponents.

Therefore, Public Choice theory helps explain why MBIs have been rejected by policy makers. However, some things are left out of the discussion, and Institutional Path Dependency may complement this approach.

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<sup>6</sup> "...a small, concentrated, identifiable and intensely interested pressure group may exert more influence on political choice making than the much larger majority of persons..." (Buchanan and Tullock 1996/1997, p.36).



### *2.3 The Institutional Path Dependence approach*

The concept of “path dependence” was originally applied to technological change processes. Arthur (1990) identified several reinforcing mechanisms during the diffusion of a technology which makes the choice for existing technologies increasingly attractive for potential adopters while non-conventional alternatives are not adopted<sup>7</sup>.

In the realm of public policy, path dependence can be interpreted as policy outcomes being dependent on the (sometimes coincidental) starting point and specific course of an historical decision-making process (Woerdman 2004). Due to increasing returns (self-reinforcing processes), institutional path dependency may lead to institutional lock-in, i.e., to the dominance of inefficient policy instruments, in the presence of superior institutional arrangements.

Choices made when a policy is being formulated have a constraining effect into the future (Peters 2001) because institutions and policies have a tendency towards inertia, i.e., a wide range of social and policy outcomes may be possible but, once particular paths have been forged, it requires a significant effort to divert them on to another course (Greener 2005).

North (1990) claimed that all the mechanisms identified by Arthur could be applied to institutions, arguing that institutional development is subject to increasing returns and that path dependence is a way to narrow conceptually the choice set and link decision-making through time. New institutions are costly to create, involve learning effects, coordination effects and adaptive expectations. Established institutions generate powerful inducements that reinforce their stability and further development.

The recent application of path dependency to policy making is a promising research field for both economists and political scientists, as shown by its application to several issues<sup>8</sup>. Pierson (2000) argues that, in the world of policy-making, increasing returns might be prevalent. Institutions and policies may encourage organizations to invest in specialized skills, deepen relationships with other organizations, and develop particular political and social identities, increasing the attractiveness of existing institutional arrangements relative to alternatives. As social actors make commitments on existing institutions and policies, the cost of exit from established

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<sup>7</sup> These mechanisms are learning effects (which improve the quality and reduce the costs of technologies the more they get adopted), economies of scale (also leading to costs reductions with increased diffusion), network externalities (the more a technology gets adopted, the more attractive is for potential adopters), technological interrelationships (an infrastructure made up of complementary technologies is built around the existing technologies) and increasing informational returns (the more a technology is adopted, the more it is known for potential adopters).

<sup>8</sup> For a brief survey of the empirical literature on path dependence, see Greener (2005).

arrangements rises dramatically (Pierson 2000)<sup>9</sup>. The short-time horizons of political actors tend to reinforce this resistance to change. As argued by Pierson (2000), many of the implications of political decisions, especially major institutional reforms, only play out in the long run. Yet, political actors are often most interested in the short-term consequences of their actions. Elected officials will pay attention to long-term consequences only when these become politically salient or when they have little reason to fear short-term electoral retribution. Once on a particular path, political actors will have powerful incentives to stay on it because switching costs are borne in the short-term, and the benefits will generally accrue in the long-term and to someone else. Climate policy shows this temporal asymmetry of benefits and costs and, thus, it is prone to this source of institutional lock-in.

Woerdmann (2004) combines elements of North's institutional theory and Arthur's evolutionary economics) to show that political transaction costs, depending and building incrementally on the path of earlier choices and events and informal constraints in the form of cultural barriers to the implementation of market-based climate policy (for instance, regarding equity) explain the rejection of MBIs. He proposes four conditions for an institutional lock-in to occur: (i) the existence of a superior alternative, (ii) incomplete information, (iii) problem-solving capacity of existing policy and (iv) large set-up costs (switching costs). The later include the costs of gathering and processing information, developing the required legal framework, (re) allocating property rights and dealing with lobbying efforts and cultural resistance.

Woerdman (2004) used this framework to explain why a change to an ETS did not take place in Germany before the EUETS. High switching costs (due to opposition by vested interests, legal problems and cultural resistance driven by equity considerations) made the replacement of existing climate policy difficult. Although an ETS might be superior to other alternatives from a social welfare point of view, it is not superior from the decision makers' welfare point of view (therefore, high "political transaction costs" result). Some formal and informal institutional barriers contribute to these political transaction costs. Political culture also adds to lock-in in climate policy instruments<sup>10</sup>, as stressed by political scientists (see below).

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<sup>9</sup> Several authors have pointed out some of the general limitations of this approach. For example, Greener (2005, p.64) observes that "we still appear to lack a coherent framework for delimiting what elements might comprise a path-dependent system, preventing case comparisons and the possible generation of additional theoretical insights from their use". In turn, Pierson (2000) argues that there are two important difficulties with increasing returns arguments: the difficulty of testing hypotheses based on complex, path dependent arguments and the danger that the increasing returns concept suggests an overly static view of the social world. Similarly, Wilsford (1994) criticises the inability to explain non-incremental change when it does, in fact, occur.

<sup>10</sup> In Woerdmann's words "for some time (...) permit trading was perceived by governments as morally more suspicious than (*other instruments*) because only the former explicitly allocates (what was seen as) pollution rights" (op. cit. p.275).

Other authors have also introduced elements of path dependency to explain the choice of climate policy instruments or their specific design. For example, Nye and Owens (2008) observe that the unwillingness of the UK government to substitute the Climate Change Levy by an ETS could be explained in terms of "policy expense and traditional role in policy making: policy competencies and oversight capacities for taxation were already well established in the UK". Azqueta (2007) argues that the apparent lack of acceptance of ETS in climate policy (in general) is related to the fact that the public administration is made up of civil servants who are reluctant to substantial changes in their way of doing and better trained and used to deal with normative and administrative procedures.

Institutional lock-in does not need to be permanent, however. Indeed, the EUETS shows that the implementation of a radical environmental policy is possible. Woerdmann (2004) suggests four conditions for an institutional break-out: (i) Existence of a superior alternative; (ii) decreasing problem-solving capacity of the existing instrument; (iii) better information; and (iv) lowering switching costs. In turn, the "factors which determine the level of these switching costs, namely legal problems, cultural resistance and defensive lobbying efforts, are reversible in different ways" (op.cit., p.73). For example, there might be lobbying pressures (from new interests) aiming at break-out. The government has a central position in this regard and has to prefer the alternative institutional arrangement to the existing one. The high switching costs (due to lobbying activities from incumbents) are an obstacle in this choice, as stressed by Public Choice.

#### *2.4. Integration of perspectives*

In spite of Woerdmann's effort to differentiate his approach from Public Choice, the latter can be considered as a complementary explanation embedded in the former, with a more static orientation. Each approach tackles the weak aspects of the other. This integration has not been attempted before.

The weak points of the Public Choice approach to explain specific climate policy choices are:

- 1) The failure to consider a dynamic framework and, thus, institutional lock-in. By taking a static approach, the possible impact of path dependence and self-reinforcing mechanisms on the continuation of (inefficient) institutions is neglected.
- 2) The conditions for escaping institutional lock-in (break out) in specific policies and institutions are neglected in the Public Choice one (see Unruh 2002).

- 3) Failure to consider the legal and cultural barriers that governments face to change to a different climate policy instrument.
- 4) Failure to consider the role of factors like sunk costs, learning, scale advantages, drivers of cultural change and possible institutional lock-in effects.

In contrast, Institutional Path Dependency underestimates the results from the interactions between different actors (bureaucrats, voters, interest groups, firms etc..) on the rejection of new instruments, which lead to the preference by policy-makers for one specific type of climate policy based on “soft” instruments at the expense of “harder” choices and a preference for CAC versus MBIs.

The bridge between both streams of the literature lies in the intense lobbying activities undertaken by several powerful actors in order to maintain the existing institutions which are optimal for their interests, although not for society as a whole. When certain actors are able to impose rules on others, the employment of power may be self-reinforcing, increasing the costs of switching to another alternative and sequentially reinforcing the lock-in. Thus, both approaches are linked in their explanation of the difficulty to replace existing institutions (climate policy instruments) through “switching costs”, the interaction between the preferences of different actors (including public administrators) and the contribution of lobbying activities to these costs. Institutional Path Dependency goes a step further by considering a dynamic framework (figure 1). External shocks are included as a possible break-out factor.

**Figure 1, here**

A common problem to both approaches is the neglect of the effects of the “political culture” and “political design” factor on the inertia to choose an existing instrument, although Woerdmann (2004) incidentally mentions “political culture”.

Political science focuses on the political context and the political and administrative frictions involved in decision making. The political institutions of different countries can provide important clues about regulatory strategy (Noll 1983). Economists have not considered political factors in their traditional analysis of instrument choice. Our theoretical framework would be enriched with insights from political science.

Particularly, the “institutional design” of specific countries, defined as the patterns of relationship between government and industry (Aguilar 1997), is key to understand how climate policy is designed and applied. The

institutional design is the result of "factors", i.e., historical developments and political traditions which contribute to the configuration of specific forms of relationships between the state and society and to specific systems of intermediation of (public and private) interests within a country. Those factors are related to the type of state, collective action practices, images of the public apparatus and associations and their mutual relationships, the frontiers between the public and the private spheres and the political culture of countries (Aguilar 1997).

### **3. Illustrating the barriers to the implementation of MBIs in climate policy: the Spanish case**

#### ***3.1. A brief overview of climate policy in Spain***

Climate change could have significant impacts in Spain, leading to changes in water flows, the disappearance of part of its coastline and negative effects in forests and agriculture, including a higher recurrence of fires, plagues and diseases (Ministry of Environment 2005). Detrimental consequences for the Spanish economy could result, given its relatively high share of tourism and agriculture in GDP and employment. These activities would be severely hurt, since tourism is highly concentrated on the coast and plagues and water shortage would negatively affect crops. Furthermore, forest fires would have a perverse influence on forest activities.

Therefore, a priori there are significant internal interests in developing effective policies on climate change mitigation. Yet, Spain has not implemented a domestic integrated climate policy to tackle such issues until very recently. Pressures to do so have actually been external, coming from the EU and its climate policy. As a Member State, Spain has ratified the Kyoto Protocol (KP) and Spanish firms are subject to the Directive establishing a CO<sub>2</sub> Emission Trading Scheme in Europe (EUETS).

This lack of implementation of measures and fast economic and population (due to immigration) growth led to a large increase of CO<sub>2</sub> emissions in the last decade (50% increase in 2008 compared to 1990 base year levels). Spain will probably not comply with its KP target (15% increase in greenhouse gas (GHG) emissions in 2008-2012 with respect to 1990): The (optimistic) government scenario predicts an increase of GHG emissions of 37% for that period.

In this context, and with a government that since 2004 has been claiming that climate change policies are one of its highest priorities, Spain is one of the best places to study the barriers to the application of MBIs from a practical point of view. Why have such instruments not been considered in the past? What measures have actually been adopted?

Climate policy in Spain has been a weak policy, being far from a priority on the real agenda of policy makers and with an almost null reliance on MBIs<sup>11</sup>. Two major reasons may explain this: i) fear of losing competitiveness, which could preclude convergence to EU economic averages, and ii) opposition by final consumers to energy price increases, mostly related to distributional concerns. Academic empirical evidence has been generally optimistic about the environmental, economic and distributional profile from the application of MBIs (see e.g. Labandeira and Labeaga 1999). The rejection of MBIs has directed climate policy efforts towards softer options.

An integrated climate policy is absent. Scattered measures are applied in different sectors without a specific overall national planning of a climate change mitigation strategy, i.e., there was a lack of policy integration regarding climate policy. Although policies and measures having a positive side-effect on CO<sub>2</sub> emissions were approved in the past, cross-cutting, horizontal policies and measures have been absent. Moreover, the measures only had an indirect effect on CO<sub>2</sub> emissions and a weak CO<sub>2</sub> additionality. They were mostly taken for other reasons: to increase employment and regional development opportunities or to reduce foreign energy dependency. The application of MBIs was totally absent. The following two measures are worth mentioning:

\*RES-E Promotion. The 1999 National Plan for the Promotion of Energy Sources (NPPES), updated in 2005, set a target of 12% of energy consumption coming from renewables in 2010, and 29% of electricity from renewable energy sources. Emissions would be reduced by 28 Mt CO<sub>2</sub> emissions annually up to 2010 by substituting renewable for conventional energy sources. To achieve this, RES-E producers benefit from feed-in tariffs (output subsidies).

\*Energy Efficiency and Energy Savings Strategy (2004-2012). Its aim is to reduce 32 MtCO<sub>2</sub> of energy-related CO<sub>2</sub> emissions annually (i.e., about 8% of Spanish emissions in a single year) by partly subsidising investments to promote energy-efficient technological change in industrial firms.

These policies focused on the industry and energy sectors. Several soft and hard measures (of the CAC type) tackled emissions from other sectors, although their influence was very limited<sup>12</sup>. Both the transport and the

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<sup>11</sup> Spanish environmental policy has been traditionally based on conventional CAC regulation and subsidies. The adoption of MBIs has been absent at the Central Government level. Only some regions have adopted some environmental taxes to deal with pollution and solid, water and hazardous wastes. However, their implementation is mostly related to fund-raising motives and not for environmental purposes (see Gago et al 2007).

<sup>12</sup> The measures in the main non-energy sectors were: transport (tax relieves, regulatory control of vehicle emissions and voluntary agreements about vehicles and emissions, measures for increasing energy efficiency by improving infrastructures, operations or developing intermodal forms of public transport and subsidies for vehicle renewal), industry

domestic/tertiary sectors are expected to significantly increase their emissions and no drastic measures have been implemented to change this trend. In general, fiscal deductions and exemptions, tax relieves, output and investment subsidies and, to a lesser extent, voluntary agreements have been applied. They have a common feature: they are all non-coercive and relatively easy to implement. Furthermore, the government significantly relies on the future use of the Clean Development Mechanism to comply with its EU-agreed target. The cost of purchase of Kyoto credits (289 MtCO<sub>2</sub>) will be spread among the great majority of silent, uninformed and unorganised taxpayers.

### ***3.2. Data sources***

The behaviour, interests and influence of the main actors in Spanish climate policy are analysed. The empirical material is based on several sources, mostly written documents: news in the main newspapers in Spain (El País, El Mundo and ABC), position statements from industry associations and other actors, official documents on climate change and published surveys on the interests of Spanish voters with respect to climate change issues. These were complemented with interviews with Spanish officials, representatives from firms and other actors (environmental NGOs and researchers)<sup>13</sup>.

### ***3.3. The neglect of market-based climate policy instruments in Spain***

The integrated approach developed in section 2 is applied to analyse the preference for "soft instruments" and the rejection of MBIs in Spanish climate policy in 1997-2003<sup>14</sup>. First, we analyse the conditions for a lock-in in

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(subsidies for scientific research and development of cleaner technologies, fiscal incentives for investments in cleaner production equipment) and residential/commercial (information campaigns on low-energy light bulbs and domestic appliances and energy certification of buildings) (See Minam 2001). These measures have proven highly ineffective to curb emissions growth in the short-term, either because they do not tackle the "scale factor" (transport), because the amount of subsidies is very low (industry) or because some of these instruments can only be expected to have an effect in the medium to long terms (regulation for buildings and information campaigns). The underlying problem is that most, if not all, of these measures do not directly affect the pocket of the private actors in those sectors.

<sup>13</sup> Eleven interviews were carried out between September 2004 and May 2005. Interviewees included three climate change and energy experts in the academic realm, two NGOs, three representatives from major Spanish firms and three public officials. They accepted to be interviewed under the understanding that their names would not be made public. In order to mitigate the risk that some information was kept hidden, the author complemented the interviews with other sources (including analysis of news in the media and official declarations of intent). Omitting the names of those interviewed seems to be common in this type of studies in other countries (see, for example, Nye and Owens 2008).

<sup>14</sup> This period was chosen because the existence of the climate change problem and international pressure to adopt policy measures became much more evident in the late 1990s. The Kyoto Protocol was approved in 1997 (although it entered into force in 2005). Albeit some countries already implemented some measures before 1997 (i.e., the Nordic countries, among others), it was relatively easy for the Spanish government to justify the lack of adoption of climate change measures, given that most other countries were not perceived to be taking measures and that there were no mandatory targets. Indeed, as argued by Michaelowa (2004, p.765), "during the first decade of climate policy, ETS was not applied on a major scale. National climate policies tended to be a hodgepodge of measures and instruments, the majority of which were subsidies and voluntary activities. Some CAC instruments formed the remainder. Only with the

climate policy in Spain, taking an Institutional Path-Dependency perspective. Second, and complementary to that, we focus on the interactions between actors leading to this situation and, particularly, on lobbying activities, interest group attitudes and preferences. Finally, barriers related to the institutional design are considered and the absence of factors leading to break-out analysed.

Spanish climate policy has mostly been based on "soft measures". The neglect of MBIs results from the combined effect of: 1) the lock-in factors of the Institutional Path Dependency approach (and the lack of conditions for break-out); 2) the preferences of policy makers for non-market mechanisms and their interaction with other actors (as emphasized by Public Choice and political scientists); 3) the traditional absence of MBIs in Spanish environmental policy and; 4) the lack of external shocks.

### *3.3.1. Interpreting the major lock-in factors*

The rejection of MBIs in Spain is interpreted according to the four lock-in factors of Institutional Path Dependency:

(i) *The existence of a superior alternative.* MBIs have been implemented in other countries (ETS in the USA) and some Northern and Central European countries (taxes). An international ETS is one of the Kyoto mechanisms. Therefore, more efficient alternatives were available.

(ii) *Incomplete information.* Complete information on the theoretical functioning and design of MBIs was in place at the moment but knowledge on the practical functioning of the scheme was not. Therefore, incomplete information might have been a factor behind the rejection of MBIs.

(iii) *Perceived problem-solving capacity of existing policy.* "Soft" instruments were considered enough to achieve the government's goals: justification that some measures were taken, minimisation of short-term conflicts with the affected sectors and actors and avoiding costs which would slow down economic convergence. However, with the exception of renewable energy support, those "soft" measures were ineffective to put the country on a Kyoto path (see 3.1). Given the uncertain entry into force of the Kyoto Protocol, the indifference of Spanish voters and the long-term economic consequences of not

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entry into force of the Kyoto Protocol becoming more and more likely, ETS became fashionable and the subject of intense political debate". On the other hand, the approval of the Emissions Trading Directive 87/2003/EC and the subsequent start of the EUETS represented a top-down implementation of measures in the energy production and industry sectors. Therefore, adopting other measures in these sectors would have been redundant. This is why the end date is 2003.



complying with the EU-agreed burden-sharing targets, the government considered that effective policies could be delayed.

(iv) *Large switching costs.* Changing to MBIs would have involved significant costs for the government, considering their interactions with different actors. This is the focus of the next subsection.

In contrast to the rejection of those instruments in Spain, the UK and the Nordic countries were successful in this regard due to the favourable interaction between environmentally-aware voters and the government, which made their adoption politically attractive for the later (i.e., factors three and fourth above) (see Pearce 2006 and Stern 2006). For example, a period of widespread optimism and faith in the efficacy of new environmental policy instruments in the UK between 1999 and 2002 led to the adoption of the UK ETS (Nye and Owens 2008).

The Nordic countries were pioneers in the implementation of CO<sub>2</sub> taxes: Finland (1990), Sweden (1991), Norway (1992) and Denmark (1994). Whereas some authors argue that they have been an effective instrument in reducing CO<sub>2</sub> emissions (Baranzini et al 2000), others are more sceptic in this regard, due to the extensive tax exemptions and lower tax rates for energy-intensive industries than households, in order to reduce competitiveness concerns (see Bruvold and Larsen 2004). Furthermore, tax rates in all these countries were higher for households than for firms, in order to reduce competitiveness concerns, which is clearly inefficient (Ekins 1999). The revenues from the CO<sub>2</sub> tax have been used in those countries to reduce the weight of direct taxes, in the context of wider ecological tax reforms. A full analysis of the functioning of those taxes is beyond the scope of this paper, however.

### *3.3.2. The interests and interactions between actors: a Public Choice perspective*

Public Choice and political science analyse the strategies and interests of different actors and their interactions with policy-makers affecting the design of climate policy in Spain, although with different languages and methodologies. This subsection adopts a public choice approach, whereas the following subsection complements it with a political science view.

### \*Policy-makers and climate policy.

Climate change mitigation has not been a policy priority in the past. The KP targets were seen as distant in the future and the compliance costs expected to be high. Thus the government postponed difficult decisions on the implementation of mitigation measures.

Until the mid-1990s, climate change policy was non-existent in Spain. The approval of the KP in 1997 and the results of climate models showing that Spain could be hard hit by climate change made policy-makers realise that something had to be done to show the general public that the government was concerned about climate change mitigation. Still, this did not lead to an effective, integrated and coordinated policy but only to scattered measures. Strong interests against an effective climate policy were able to prevent the implementation of "hard" instruments leading to real emission reductions. In addition, the main short-term economic goal of the government (the control of the public deficit) made it difficult to justify the earmarking of public funds for an effective climate policy. Therefore, in the late 1990s the government's strategy was to postpone the implementation of "hard" measures and use other policies, which indirectly reduced CO<sub>2</sub> emissions, and disguised then as CO<sub>2</sub> mitigation measures. "Soft" measures were applied in the form of direct subsidies for clean technology adoption or feed-in tariffs for renewable energy promotion.

In contrast to hard instruments, the soft, politically easy (and, thus, attractive) measures taken were very favourable for affected firms and not unpopular for voters. This confirms Woerdmann's argument on the perceived problem-solving capacity of existing climate policy. They were also neutral, popular or advantageous for specific, highly visible social groups, which could represent a significant source of conflict, including the coal mine workers in the North, polluting firms (benefiting from the subsidies) and renewable energy producers. The burden fell on a silent (and ignorant) majority of consumers/taxpayers<sup>15</sup>.

Avoiding confrontation was a major reason why, within the "hard" category, MBIs were not applied in national climate policy. Although they provided flexibility in complying with targets, MBIs involved additional and highly visible costs for industry, while soft measures and CAC instruments hardly did. And, albeit taxes could have provided substantial revenue for the government, it was not politically profitable for policy makers to engage in an effective climate policy based on MBIs since other problems were more relevant for Spanish voters (see below).

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<sup>15</sup> For example, hardly any consumer knows that, through the electricity bill, they are paying both to maintain coal subsidies and to promote renewables. The costs of information and organisation are too high for these actors.

\*Abatement lobbies: renewable energy producers and NGOs.

Interest groups organise for collective action and exhibit rent-seeking behaviour. Abatement lobbies can be quite influential in the passing of abatement legislation. The most important are:

*>Environmental NGOs*

Three main environmental NGOs act in Spain, two with an international scope while the other is purely national. There are also several local NGOs which usually concentrate on local environmental problems. Climate change mitigation is not in their discourse. They know they can have more “visibility” and publicity by focusing on local problems. One of their targets being to increase affiliations (and financial contributions), they believe that people are generally more worried about the closer, local environmental problems than about the more distant (in space and time) global problems.

The “international” and “national” NGOs are not a homogeneous group. Their interest in environmental problems, their approach and even their capacity are very different. Some of them show a high degree of professionalism, have a national as well as an international focus, cooperate with other stakeholders and have skilful human resources. Some of these NGOs actively discussed initial drafts of the National Climate Strategy with the government.

There was a convergence of views of all the NGOs concerning the climate policy actions Spain should implement (see WWF et al 2002), proposing a combination of measures, including CAC regulations, subsidies and taxes. More specifically, they defended the implementation of subsidies for clean technologies in industry and the penetration of renewable energy, favoured CO<sub>2</sub> and fuel taxes and the removal of subsidies to fossil fuels<sup>16</sup>.

NGOs initially rejected ETS on the grounds that paying for the right to pollute was “immoral” and “useless”, as they had done decades ago with environmental taxes, which now they embrace. A misunderstanding of how permit markets function initially led NGOs to fear that “ETS would allow firms to increase pollution as they wanted”. Their human resources had to cover several issues at once and therefore could not specialise. Experts in climate policy were lacking (although this has changed). The international NGOs were not against the instrument, but they favoured auction as the allowance allocation method. This general negative opinion of

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<sup>16</sup> More specifically, they favoured CO<sub>2</sub> taxes on fuels according to their carbon intensity and an ecotax on CO<sub>2</sub> emissions from all productive processes with recycling of those revenues to encourage the development and adoption of less carbon-intensive technologies.

environmental NGOs on ETS was covered by the mass media, contributing to the “negative perception” and understanding that ETS had between the general public.

All in all, their influence on Spanish climate policy, including the implementation of a National Climate Strategy, has been modest, probably due to a lack of support by civil society resulting in a weak legitimization in their relationship with the public administration.

*>Renewable energy producers.*

The Association of Small Renewable Energy Producers (APPA) is a well organised and influential climate change abatement lobby, which negotiates directly with the authorities. Its role is related to the way renewable energy is promoted in Spain, through a feed-in tariff system paid by all consumers in their electricity bill. The trend in 2000-2003 was to reduce them in order to diminish the financial impact on the consumer. APPA tried to influence public opinion to avoid such reduction by spreading the idea that renewables provided socioeconomic and environmental benefits and that they would help Spain achieve its Kyoto target. APPA has favoured MBIs leading to a carbon price because it would benefit renewables. Their significant negotiation power is also related to the fact that the winners (renewable generators) are relatively concentrated, whereas the losers (consumers) are widespread and the losses for the losers are non-transparent (i.e., not highly visible). There is a classic redistribution from unorganised groups at stake and a significant influence on regulators, partly due to information asymmetries.

\*Financial community.

The financial community played a very limited role in climate policy, given the lack of measures and the low relevance that policy makers, firms and citizens attached to this issue. This has changed somehow after the implementation of the EUETS

\*Voters.

In the past, the Spanish public has not considered climate change to be a major environmental problem, with local environmental problems being the priority. A proof of the lack of voters' interests on environmental issues in general (and climate change in particular) is that green parties are not represented in Parliament, that green issues are superficially treated in the programmes of traditional parties and that debates on these issues during political campaigns are absent.

In addition, several surveys identify the relevant opinions of voters with respect to environmental issues and climate change. The most recent one was carried out in June 2007 among 1200 Spanish residents (see Pérez-Díaz and Rodríguez 2008). This and other surveys show that there has been:

1) *A lack of priority given to environmental problems.* According to the European Commission (2007), only 2% of those surveyed mention environmental protection as one of the two main problems of their country (ranking 24<sup>th</sup> in the EU-27). According to Centro de Investigaciones Sociológicas, environmental problems were considered as the main problem of Spain by only 2.6% in 1998, ranking 9<sup>th</sup> behind unemployment and terrorism, among others.

2) *Climate change is not a top priority environmental problem.* Interviewees mentioned climate change as the fifth most urgent Spanish environmental problem in 2001, behind air pollution, pollution of rivers and lakes, the destruction of the ozone layer and the “dangers of nuclear energy”. In other surveys, the relevance of climate change appears below water scarcity, soil erosion and desertification, forest fires and soil occupancy.

3) *The benefits of climate change mitigation outweigh the costs.* 72.5% of those interviewed in 2007 agreed that “climate change mitigation efforts by Spain would make the economy more competitive because a more efficient use of energy will result”. In contrast, only 18.5% agreed that those efforts will be “too expensive and will damage the Spanish economy”. There is ignorance or unconcern about mitigation costs.

4) *Preference of soft versus hard.* Soft measures (such as information campaigns, subsidies and promotion of public transport) are preferred over the hard ones (limiting the emissions of the existing vehicles, banning the use of the most polluting vehicles with high pollution levels and increasing the price of polluting products). Increasing petrol taxes and increasing retail electricity prices are particularly unwelcome, whereas subsidies are strongly supported.

5) *Unwillingness to bear additional costs* as a result of environmental protection or a more efficient use of energy. In 2004, only 28% agreed to pay more expensive prices to protect the environment, with 45% against. Only 22% favoured an increase in taxes for that purpose, with 54% against. 35% agreed to pay more for electricity from renewable energy than from other sources, in line with the EU-27 average (34%).

Climate change mitigation competes with other voters' interests (i.e., unemployment, housing, immigration, terrorism...) but is regarded as an uncertain long-term issue, in contrast to those tangible short-term problems. Besides, climate policy would bring long-term benefits at the expense of immediate costs.

#### \*Mass media.

News related to climate change issues were scarce in the past. The message that there was not an effective, coordinated and integral policy was disseminated, but it hardly had an impact on civil society, relatively indifferent about climate policy. While carbon taxes were never mentioned, the mass media was very critical of ETS, stressing that this system was a cheap way for firms to get away from emissions reductions. Their ecologically-biased coverage affected the rejection of this instrument by many.

#### \*Industry.

Corporate lobbying effectively influenced the approval of climate mitigation instruments towards "soft" instruments, which had a limited impact on the costs of firms (i.e., voluntary measures) or was even financially beneficial for them (i.e., subsidies for cleaner technology adoption). The rejection of ETS by industrial organisations was clear. The Spanish Association of Business Organizations (CEOE) asked the government in 2002 to postpone the transposition of the Emission Trading Directive.

To sum up, since voters were not interested in climate change, climate policy was not perceived as a way to ensure reelection by politicians. "Hard" climate policy (in the form of MBIs) was not politically profitable, since it imposes highly visible costs on consumers or taxpayers and generates confrontation with powerful interest groups. This confrontation was minimised by adopting "soft" instruments. Although these also had a cost, it was lower, non-transparent and paid by the majority of ignorant and uninformed taxpayers or electricity consumers. Since the total costs were not high compared to the large number of people who would pay for them, these would not be likely to organise and make noise anyway (i.e., even if they knew).

#### *3.3.3. Barriers related to the political culture and institutional design: a political science perspective*

The introduction of MBIs, a radical innovation in environmental policy, is generally slow. Stakeholders are adapted to the existing "soft" regulation. A radical institutional change is highly incompatible with the existing regulatory structure and, thus, competes with it. In Spain there has been a lack of tradition in the use of flexible

and market-based instruments in environmental policy and a political culture based on the use of CAC regulation.

Several “political science” aspects, complementary to the previous perspectives, are crucial to understand the design of environmental policy in general and climate policy in particular in Spain:

#### 1) Institutional design

The patterns of relationship between the public administration and industry, i.e., the Spanish institutional design, is mostly based on a non-cooperative model of interest intermediation, characterised by the almost exclusive leading role of public authorities in the public sphere, where the administrative and political staff designs the policies without incorporating interest groups in the political process.

An institutionalised cooperation between government and industry in the realm of public policy in general and environmental policy in particular has been absent. The traditional interventionism by the state and the weakness of interest groups have led to an institutional design which is characterised by scarce, discontinuous and informal cooperation between public and private actors. This relationship is informative on the part of government (meetings with firms to provide them information on legislation) and demanding on the part of industry (Aguilar 1997).

The strength and predominance of the state over individual actors and private interests made it very difficult for actors to actively participate in the development of national (and even regional) climate policy. Tábara (2007) explains the failure of Spanish climate policy by the lack of participation of civil society and regional political actors.

#### 2) Lack of priority for climate policy

The weak environmental institutional culture in Spain has led to accumulated passivity and inertia. As a result, the institutional organisation regarding environmental issues (i.e., administrative organisation and environmental policies) has been late and imperfect.

A poor environmental political culture also adds to explain the late development of Spain's climate policy. Politicians in Spain have mostly been interested in growth and competitiveness, whereas climate change mitigation has been a non-issue (Tabara 2007). The lack of an environmental movement, low importance placed on environmental issues by the mass media and the absence of a green party also contribute to framing climate policy as a non-issue (Tábara 2003).

However, an internal change occurred in March 2004 with the change of government, who made climate policy one of its flagships. This internal factor was partly a result of external pressures from the EUETS which required some cooperation between firms and the public administration and between the central and the regional administrations (see below).

### 3) Lack of vertical and horizontal coordination

A vertical and horizontal lack of coordination has been the norm in climate policy in Spain. The first relates to the lack of coordination between different administrative levels (state and regions), a problem of environmental policy in general. Aguilar (1997) and Tábara (2003) argue that the transference of environmental functions to the regions (Autonomous Communities, AACCs) in the late 1970s was done without a legal framework with homogeneous state criteria for its adequate management. This led to confusion, disorganisation and lack of vertical coordination in the environmental administration.

On the other hand, although the competences for climate policy officially fall in the Ministry of Environment, other Ministries have relevant competences regarding climate policy (i.e., energy policy, agricultural policy, transport policy, etc). At least until the imminent approval of the EUETS Directive, the coordination between these Ministries was limited. Indeed, the previous institutions to deal with Climate Change (the National Commission for Climate Change replaced by the National Council of Climate Change) showed a lack of vertical (and horizontal) coordination: there were several overlapping functions and tasks and no direct representation of the 17 AACCs (Tábara 2003). The creation of the Spanish Office for Climate Change in 2001 changed this picture somehow.

### 4) EU influence

Many institutional changes regarding environmental policy come in the form of European Directives, an external shock for Institutional Path Dependency. Their impact has led to a lower reluctance of public authorities with respect to the participation of interest groups and a greater receptivity of industry regarding its involvement in environmental policy formulation (Aguilar 1997).

This has also been the case with climate policy. The legal requirements from the European Commission in the context of the European Climate Change Programme and the EUETS have increased the level of priority attached to climate policy in Spain and led to some changes in the administrative organisation of climate policy matters and in the relationships between government and industry (towards increased cooperation).



### *3.3.4. The non-existence of lock-out factors. The role of external shocks*

Institutional lock-in does not necessarily have to be permanent. In order to identify the possibility of a break-out one has to keep track of policy and legal developments, changes in perceptions, cultural values and power positions of the actors involved (Woerdmann 2004). One of the conditions for break-out towards a more effective climate policy in Spain based on hard instruments and, within these, MBIs, was fulfilled: A superior alternative existed. However, the rest of break-out conditions (ii, iii and iv) were absent. First, better information on the functioning of carbon taxes and ETS increased only marginally (the greatest increase came with the implementation of the EUETS). Most importantly, there was not a perceived reduction in the problem-solving capacity of existing climate policy, which continued to satisfy the aforementioned government's goals.

Finally, the switching costs to a potentially new system were not reduced because lobbying by actors favouring MBIs and external shocks did not materialised. The pressure for carbon taxes and ETS of some actors potentially benefiting from the new system (i.e., renewable energy producers) was either very weak or non-existent.

External shocks (in the form of sudden and severe changes in the international energy domain and reports showing the benefits of alternative systems and MBIs applied in other countries) were also not strong enough to induce a break-out. The EU ETS was an external shock, although out of the period considered.

Finally, the signing of the Kyoto Protocol and compliance with its targets did not make the government more favourable to ETS. After all the KP does not require implementation of domestic ETS to reach individual country targets. This rejection of ETS by national policy-makers was also visible at the EU level. The government challenged the EU ETS by stating that it would have very negative impacts on the competitiveness of Spanish industry, confirming that this instrument would have never been implemented domestically in Spain.

Regarding CO<sub>2</sub> taxes, they have never been suggested in the Spanish case for reasons similar to the non-adoption of ETS. The only exceptions are regional initiatives. Although five regions (covering half of the Spanish territory) have adopted taxes on air pollution, very similar to the Swedish SO<sub>2</sub> tax, all of them deal with local emissions and only in one case (Andalucía) are CO<sub>2</sub> emissions included. Their administrative costs were low because existing administrative infrastructures were used (Labandeira et al 2007). Yet, in order to avoid the conflict with the regulated sectors, their tax rates have been very low and they have been applied to a very

limited number of large firms (i.e., wide exemptions). These design elements have reduced the potential rejection of the scheme and have increased their political feasibility (Gago et al 2007).

#### **4. Concluding remarks and policy implications**

Although economic instruments tackling CO<sub>2</sub> emissions have been implemented in several countries, and the analysis of their functioning has received much attention, the literature on the factors (drivers) which led to their implementation in the first place is surprisingly thin. Analysing the barriers to MBIs in climate policy allows us to more accurately compare the cost-effectiveness of market-based versus CAC regulation, draw lessons to facilitate the implementation of these instruments in the future and reduce the costs of adoption. This calls for the realisation of more empirical studies which show the real-world difficulties in introducing MBIs.

In this paper an integrated Public Choice-Institutional Path Dependence approach complementing standard Environmental Economics analysis has been built and applied to explain why a strong and integrated climate change policy, based on MBIs, has been lacking in Spain and why the few measures taken were "soft". Although Spain provides the perfect illustration, this framework could be applied to analyse similar situations in other countries. Indeed, the results might show close resemblance to other countries, although interest group attitudes and interactions may vary across countries.

The paper has shown the usefulness of the approach to interpret climate policy decisions. Instruments have to be introduced within existing institutional structures and political constraints. It is shown that several key factors provide a complementary explanation for the lack of implementation of MBIs in climate policy, including the interaction between stakeholders with different interests and strategies (public decision makers, firms and voters), the large switching costs involved in the shift to a new policy, the perceived problem solving capacity of existing climate policy, the political culture traditionally based on CAC instruments and an institutional design with a non-cooperative relationship between industry and the government. All these factors made the adoption of MBIs unattractive for policy-makers. This decision was taken in a context in which the benefits from climate policy were experienced beyond the decision maker's term in office, while the costs were borne in the short term. This makes the mitigation of climate change different from other environmental problems. Indeed, the very nature of the environmental problem can have an important effect on interest group attitudes (Hahn 1989). The "not-in-my-term-in-office" syndrome describing the lack of enthusiasm of particular decision makers to make changes whose benefit may accrue long after he has retired but whose costs are incurred in the short term (Ashford 2005) applies more to climate policy than to instruments that tackle other

environmental problems, whose benefits may be more tangible (localised) and short-term, i.e., immediately felt by the public at large, providing a greater justification for the policy maker to adopt measures.

Although further multidisciplinary research to explain the barriers to the implementation of these instruments by economists, political and social scientists should be undertaken. Our integrated approach suggests that some design elements may reduce the barriers to the adoption of MBIs. For example, existing administrative structures could be used to implement carbon taxes. Furthermore, the choice of instruments has to take into account the wider economic/institutional context in which they will be applied in addition to the technical characteristics of the instrument. This context consists of the different actors, their interests and values and their interactions. Particularly those between government and industry (i.e., institutional design).

A key lesson is that building acceptance and dealing with the “losers” is a key condition for successful introduction of MBIs, although this could impair their environmental effectiveness or efficiency (for example, through exemptions). Acceptance can be increased if carrots and sticks are used together, for example, combining information measures and MBIs. In addition, involving key stakeholders in policy design through formal consultations, exactly in the opposite direction of the Spanish institutional design based on a non-cooperative model, could improve their acceptability.

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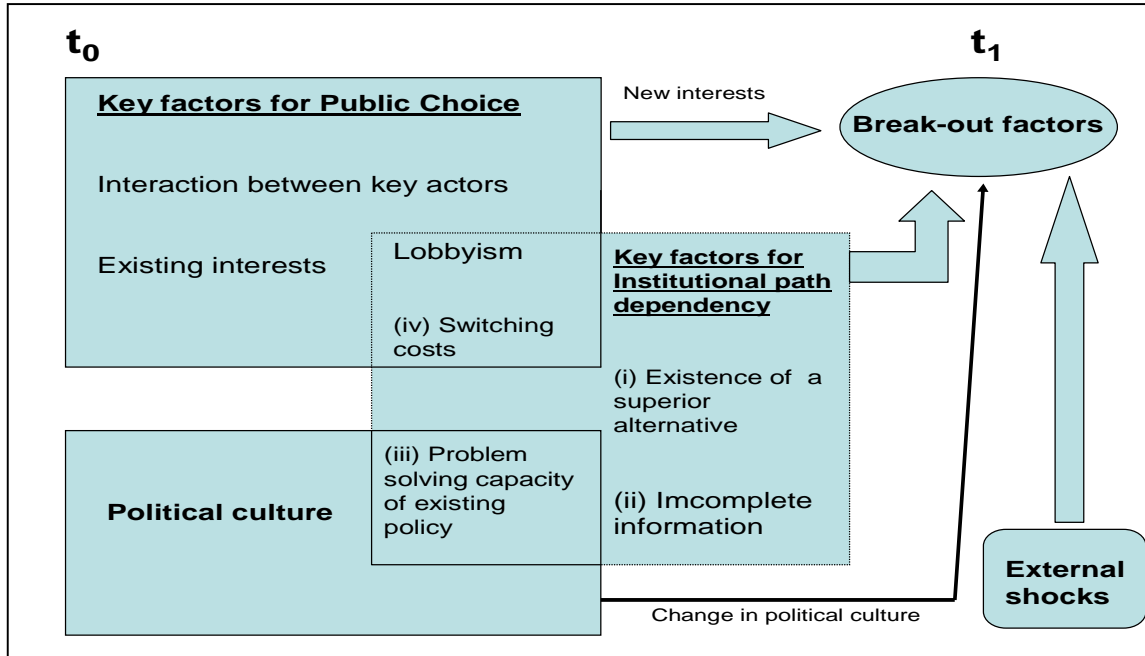
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Figure 1. Illustrating the integrated framework to explain the slow diffusion of new climate policy instruments and break-out factors



Source: The authors



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