Timing and distributional aspects of transaction costs in Transferable Development Rights programmes

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\textbf{Abstract}

Planners are required to evaluate planning policy instruments to develop a better understanding of how they can improve their policy design and implementation processes. Transferable Development Rights (TDR) programmes are one of the market-based policy instruments that have attracted considerable attention among planners and economists. Given that TDR programmes have been introduced as an alternative to traditional regulatory instruments in several jurisdictions on the basis that their implementation will result in better policy outcomes, evaluation of these alternative programmes is particularly important. Like all policy instruments, the activities concerned with the design and implementation of TDR programmes may involve significant transaction costs. These activities can be considered as a series of transactions from the perspective of Transaction Cost Economics (TCE). While transaction costs are expected to vary across the lifecycle of a policy instrument, up to now there have been no systematic research studies concerned with why, and how, such transaction costs occur and are distributed among parties involved in different phases of TDR programmes. In order to aid better design and implementation of TDR programmes, this paper analyses the effects of transaction costs throughout the life of four TDR programmes (Calvert, Montgomery, St. Mary’s, and Charles Counties) in the US state of Maryland in order to gain a better understanding of the timing and distribution of such costs incurred by different parties involved.

1. Introduction

Managing the externalities of development is critical in developed and developing countries as is ensuring that the costs of environmental preservation are minimised and the benefits of development are shared more equitably. Regulatory policy instruments, such as zoning and development control, have traditionally been the dominant approach in achieving such planning objectives. Having recognised some drawbacks of these instruments, an increasing number of economists/planners have been proposing the implementation of market-based instruments (MBIs) \cite{Clinch2008, Micelli2002, Turk2013}. MBIs change the costs and benefits of agents’ actions by making preferred social and environmental outcomes financially more attractive \cite{OECD1999}. MBIs are arguably more statically (least-cost) and dynamically (encourage continuous improvement) efficient and more equitable (due to their redistribution mechanism), and also involve fewer transaction costs compared to traditional regulatory instruments \cite{Hahn1992, Jaffee1995, Lockie2013, Stavins2001, Whitten2007, Bueren2003}.

The Transferable Development Rights (TDR) approach is one MBI that has received considerable attention in a number of developed and developing countries \cite{Janssen2008, Shahab2011, Wang2010} and has been implemented to address different land preservation/development objectives. Using a zoning system, development rights can be transferred from so-called ‘sending areas’ that are less desirable for development from a public-policy perspective, to designated areas for development – so-called ‘receiving areas’. Landowners of sending areas receive payment for the sale of their properties’ development rights. Developers may purchase additional development rights from sending areas if they wish to develop beyond a specified permitted level in receiving areas \cite{Machemer2002, Nelson2011}

Some researchers have studied factors affecting TDR success \cite{Aken2008, Chan2015, Chan2015, Chan2015, Chan2015}. While transaction costs, and other institutional aspects of
a policy, can affect the efficiency, effectiveness and equity of policy instruments (Buitelaar, 2007; Dawkins, 2000; McCann, Colby, Easter, Kasterine, & Kuperan, 2005; Shahab, Clinch, & O'Neill, 2018a), so far, there has been little research concerning institutional aspects and related transaction costs of TDR programmes. While, in theory, TDR programmes should lead to low transaction costs (Field & Conrad, 1995), the design and implementation of these programmes can be very high (Bruening, 2008; Chomitz, 2004; Messer, 2007; Shahab, Clinch, & O'Neill, 2018b) involving costs that vary across time (i.e. the lifecycle of a policy instrument), which may also be distributed unevenly among parties (Coggan, Whitten, & Bennett, 2010).

This paper addresses this issue by analysing the process of designing and implementing TDR programmes through the lens of Transaction Cost Economics (TCE). The main objective is to analyse when transaction costs arise and by whom such costs are incurred. The paper investigates the effects of transaction costs in different phases of designing and implementing TDR programmes, and examines the distribution of such costs among different parties. In line with TCE literature, this paper considers activities concerned with the design and implementation of TDR programmes as a series of transactions. This approach has been used in several other studies (Alexander, 2001a, 2001b; Cho, 2011; Tan, Beckmann, Qu, & Wu, 2012; Thompson, 1999; Whittington & Dowall, 2006), but has not been applied in the study of a planning policy instrument, such as TDR. To this end, we briefly review previous studies concerning TDR evaluations, as well as the literature on TCE. Then, through identifying transactions in the process of designing and implementing TDR programmes, this paper analyses the distribution and timing of related transaction costs arising in each phase of this process.

2. Evaluation of Transferable Development Rights (TDR) programmes

Since the introduction of TDR programmes in planning in the late 1970s (Renard, 2007), researchers have attempted to evaluate these programmes (Aken et al., 2008; Chan & Hou, 2015; Kaplowitz et al., 2008; Machemer & Kaplowitz, 2002; McConnell & Walls, 2009; Pruett & Pruett, 2007). A review of this literature shows that most studies have taken a conformance-based evaluation approach assessing the degree of conformity between outcomes of an implemented programme and its specified objectives (Faludi, 1989; Shahab, Clinch, & O’Neill, 2017). For example, Machemer and Kaplowitz (2002) define the degree of success of a programme based on the number of completed TDR transactions and the number of acres preserved. This approach has at least two main drawbacks. Firstly, the specified policy objectives are not necessarily all the outcomes of a policy (Shahab et al., 2017). While evaluating such criteria is necessary, it is not always sufficient, largely because of side-effects (Mickwitz, 2013). Thus, conformance-based evaluation only enables planners to evaluate partial outcomes of programmes (i.e. the intended outcomes). Secondly, this approach usually neglects to take account of transaction costs, and other institutional aspects, in the design and implementation of programmes. This paper focuses on an aspect of the second drawback of the conformance-based approach that has, thus far, received little attention in TDR studies, namely, institutional aspects of the design and implementation of TDR programmes.

3. Transaction Cost Economics

As one of the central concepts and significant contributions in New Institutional Economics (NIE), ‘transaction costs’ were conceptually introduced by Nobel Laureate Ronald Coase (1937) in his seminal paper ‘The Nature of the Firm’ as simply ‘the cost of using the price mechanism’. These costs are defined as “all costs other than the costs of physical production” (Lai, 1994, p.84). In TCE, the transaction is the ‘basic unit of analysis’ (Williamson, 1998). A transaction can be defined as an agreement between two or more parties to exchange goods, services, and payments that can be organised in different ways. A transaction is an intention to undertake an ‘action of economic or other value’ (Dixit, 1996) where, through a contract, buyers and sellers agree to exchange or provide products, properties, services, human resources, and intellectual or other forms of capital.

While the impact of transaction costs on the efficiency of a policy has been discussed (Buitelaar, 2007; Dawkins, 2000; Rerstad, Vatn, & Kvakkestad, 2007), there has been limited consideration of the distribution of such costs. Transaction costs incurred by the different parties are expected to vary widely (Coggan et al., 2010; McCann et al., 2005), according to policy approach and its relevant institutional design and arrangement. According to Coggan et al. (2010), the actions and interactions between private and public parties can have an upward or downward influence on the significance and distribution of transaction costs. Prior research shows that both private and public transaction costs can be significant (McCann & Easter, 2000; Mettepenningen, Verspecht, & Van Huylenbroeck, 2009; Rerstad et al., 2007). Therefore, particular attention should be paid to their distribution among the parties involved.

Transaction costs include all of the costs associated with the design and implementation of a policy instrument and can be decomposed into ex-ante and ex-post transaction costs (Hennart, 1993; North, 1990; Williamson, 1985). Ex-ante costs refer to costs that arise before the actual transaction, whereas ex-post costs are costs that occur after the transaction. The type, magnitude, and distribution of transaction costs associated with policy decision and implementation are not equal for each stage of these activities and vary over the lifecycle of a policy (Coggan et al., 2010; Falconer, Dupraz, & Whity, 2001). Thus, in order to analyse adequately the transaction costs of TDR programmes, all stages should be considered.

4. Methodology

A case-study methodology was utilised to analyse the process of designing and implementing TDR programmes through the lens of TCE. Four TDR programmes in the US state of Maryland were selected, including Calvert, Montgomery, St. Mary’s, and Charles Counties (Fig. 1). These counties are located at different distances from Washington D.C., and experience different levels of development pressure. Calvert and Montgomery Counties were initiated in 1979 and 1980, respectively. These programmes have been successful in preserving areas that specified for protection (McConnell, Walls, & Kelly, 2007; Walls & McConnell, 2007). St. Mary’s and Charles Counties, initiated in the 1990s, are viewed as having been less successful, in that they have preserved limited amounts of land (Dehart & Etgen, 2007; McConnell et al., 2007).

Semi-structured interviews were used to collect qualitative data from different parties involved in the TDR transactions in each TDR case-study area. A semi-structured interview approach was chosen as it enabled the tailoring of questions to the participants’ positions, experiences and interview context (Galletta, 2013; May 2011). Interviews were conducted with 46 participants in the four TDR programmes between March and July 2016. These key stakeholders included TDR sellers (landowners and farmers), TDR buyers (developers), and key personnel from the programme administration and planning departments. Since a large number of TDR transactions occurred with the assistance of a land-use attorney and/or a broker, representatives from these intermediaries were also interviewed (Table 1).

To ascertain when transaction costs arise, and by whom such costs are incurred, using open-ended questions, we asked interviewees to guide us through the process as they experienced it. A number of subsequent questions were asked to gain a firm understanding of their experiences and the process involved. Open-ended questions were asked to provide the maximum flexibility for the participants in
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