



Factors that influence transaction costs in development offsets: Who bears what and why?

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ABSTRACT

Environmental policy instruments generate transaction costs to public and private parties. There is a growing literature reporting on the size of transaction costs produced by environmental policy instruments. This paper extends that literature through an analysis of the factors that influence transaction costs in environmental policy and how this influence occurs. The theory based factors that influence transaction costs are categorised as: 1) transaction characteristics; 2) transactor characteristics; 3) nature of the institutional environment; and 4) nature of the institutional arrangements. We examined how these factors influenced transaction costs through the analysis of two Australian-based development offset schemes with different policy designs. We found evidence of all four theory-based categories of influence in the policy case studies. The degree of influence and how each factor influenced transaction costs varies across the two policies and between parties. Policy design as a component of the institutional environment had a particularly large bearing on transaction costs of offset buyers and the policy administrator. An important contribution to transaction cost theory assumes the institutional environment as given.

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1. Introduction

When environmental goods and services such as clean air, clean water or habitat for endangered fauna are not provided to the socially optimal level through markets, government intervention may be justified (Vatn, 1998; Wills, 1997). Governments are becoming increasingly interested in policies which assign property rights to environmental goods and services and facilitate trade in rights to protect or deliver these desired environmental goods and services (for example, the Australian Government has a history of implementing market-based instruments www.marketbasedinstruments.gov.au). The caveat on government intervention is that the benefits of introducing the intervention relative to the status quo must be greater than the costs. Calculations of benefits and costs

should extend beyond changes to producer and consumer surpluses to include transaction costs: the costs to define, establish, maintain and exchange property rights (McCann et al., 2005) as well as the costs to change organisations and institutions and define the problems that these institutions and organisations are intended to solve (Marshall, 2013-this issue; McCann, 2013-this issue).

There is a growing literature reporting the extent of transaction costs incurred by administrators of environmental policy and private parties who engage with the environmental policy as well as analyses as to why transaction costs occurred (Falconer, 2000, 2002; Falconer et al., 2001; Garrick et al., 2013-this issue; Kuperan et al., 2008; McCann and Easter, 2000; Mettepenningen et al., 2009; Ofei-Mensah and Bennett, 2013-this issue; Rorstad et al., 2007; Vatn et al., 2002). In this paper we make four contributions to that literature. First, we extend the literature by exploring what factors influence transaction costs to public and private parties in an environmental policy and how this influence occurs.⁴ This discussion is aimed at policy makers. Second, we

Abbreviations: BRABA, Building Resilient Australian Biodiversity Assets; CSIRO, Commonwealth Scientific Industrial Research Organisation; EPBC, Environmental Protection Biodiversity Conservation (Act); VMA, Vegetation Management Act.

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⁴ Ofei-Mensah and Bennett (2013-this issue) highlight the need for this type of analysis in their paper.

highlight the importance of policy design, a component of the institutional environment, on transaction costs. A further theoretical contribution is the introduction of input specificity. Finally, we focus on these issues as they pertain to a specific environmental policy which seeks to generate terrestrial conservation through the allocation of property rights and the facilitation of trade. This type of policy is in contrast to government payment for voluntary actions, such as agri-environmental schemes, which have been the primary focus of the literature to date (Ducos and Dupraz, 2006; Ducos et al., 2009; Mettepenningen et al., 2009, 2011; Nilsson, 2009; Rorstad et al., 2007).

The environmental policy analysed in this paper is a development offset. Development offsets (referred to as offsets) are a form of environmental policy that allows development to impact on the environment provided that impact is mitigated on the development site, on another site (third-party offset) or in non-physical ways such that there is no net loss in the supply of environmental goods and services (Gibbons and Lindenmayer, 2007; Moilanen et al., 2009; Norton, 2009; ten Kate et al., 2004). There is much debate within the ecological literature surrounding what can be used as an offset (Gibbons and Lindenmayer, 2007; Maron et al., 2012). For example, offsetting activities may include planting trees or protecting existing vegetation in perpetuity. There are often limits to what can be offset, however. For instance, development approval and permitting provisions may require damage to be avoided or minimised on-site before an offset is allowed. It is also possible that some on-site impact mitigation may be required before an offset is allowed. By requiring mitigation but facilitating flexibility, in theory, offsets allow no-net-impact from a development to be achieved at a least cost. The concept of third-party offsets, the offset scheme type concentrated on in this paper is illustrated in Fig. 1.

A third-party offset transaction involves developers as the offset buyers, landholders as the offset sellers and the policy administrator as the regulator who requires the purchase of the offset as part of the development approval, approves the offset transaction and often holds the conservation contract with the offset seller. Many offset exchanges also include additional parties who assist in the exchange through information provision or brokering services. These parties are referred to as intermediaries (Coggan et al., 2013).

The paper is structured as follows. The analytical framework used to understand the factors that influence environmental policy transaction costs is discussed in Section 2. The methodology for empirically examining if and how these factors influence transaction costs for an environmental policy is set out in Section 3. Results and analysis are reported in Section 4. Conclusions are drawn in Section 5.

2. Analytical Framework

2.1. Transaction Costs

There is extensive literature defining transaction costs (Allen, 1991; Barzel, 1985; Cheung, 1969; Coase, 1960; Dahlman, 1979; North, 1990b; Stiglitz, 1986; Vatn, 1998; Wang, 2007; Williamson, 1973, 1981, 1998). Reviewing this extensive literature for the application to environmental policy, McCann et al. (2005) define transaction costs as the cost of resources used to create and use a policy through defining, establishing, maintaining and transferring property rights. This has been a widely used definition in the literature exploring transaction costs in environmental policy. This definition is updated in this to also include the costs to change organisations and institutions and define the problems that these institutions and organisations are intended to solve (Marshall, 2013-this issue; McCann, 2013-this issue). In this paper the focus is on the transaction costs of policy use only. For an environmental policy, transaction costs are experienced by the administrator and private parties are affected by the policy. Transaction costs are incurred due to expenditure on supplies, travel and time/labour associated with the activities of: information collection and analysis; policy development, enactment and implementation; contracting; and compliance and enforcement (Table 1) (Coggan et al., 2010; McCann et al., 2005).

2.2. Factors that Influence Transaction Costs

Understanding the factors that influence transaction costs to all parties in an environmental policy derives from a contract cost analysis within organisational economics (Williamson, 1975, 1981, 1985, 1996, 1998, 1999) and its critics that pay attention to a broader range of sources of costs (Challen, 2000; McCann et al., 2005; North, 1990a; Vatn and Bromley, 1994). Empirical analyses of environmental policy have generated a further detailed understanding of transaction costs (Buitelaar, 2007; Falconer, 2000, 2002; Falconer and Saunders, 2002; Falconer and Whitby, 1999; Falconer et al., 2001; McCann and Easter, 1999; Mettepenningen and Van Huylenbroeck, 2009; Nilsson, 2009; Rorstad et al., 2007). A number of studies also explicitly discuss factors that influence transaction costs (Ducos and Dupraz, 2006; Ducos et al., 2009; Falconer and Saunders, 2002; Falconer et al., 2001; McCann, 2013-this issue; Mettepenningen and Van Huylenbroeck, 2009; Mettepenningen et al., 2011; Nilsson,

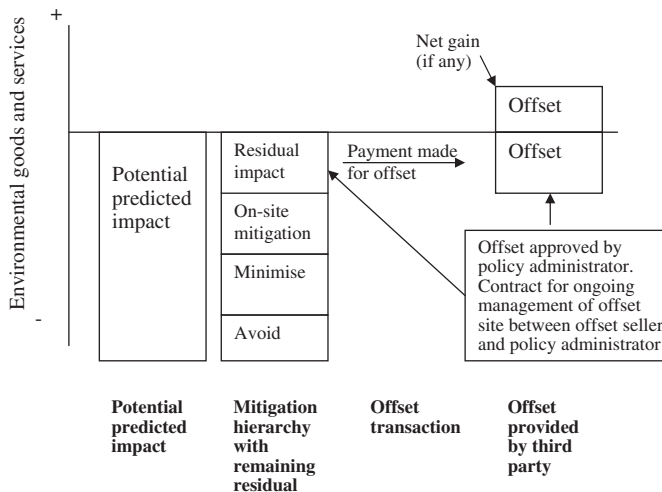


Fig. 1. Offsets within the mitigation hierarchy. Source: Adapted from Crowe and ten Kate (2010).

Table 1

Transaction costs in offset policy creation and use. Source: Adapted from Coggan et al. (2010) and McCann et al. (2005).

Type of transaction cost	Activities that generate transaction cost to	
	Public party	Private party
Information collection	Problem analysis, policy design	Learning about the policy
Policy enactment	Policy briefing, legislation change	Lobbying for or against the policy
Implementation	Hiring and training staff, equipment purchase	Equipment purchase
Contracting	Allocating permits, assessing and approving transactions	Finding trading partner, negotiating and finalising offset requirements, negotiating management plans
Support and administration	Assessing applications, auditing process	Preparing applications, record keeping
Compliance monitoring	Auditing compliance, reporting effectiveness	Conducting and reporting on monitoring
Detection and enforcement	Time and cost of litigation	Defence of property rights/actions

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