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Accounting for carbon and reframing disclosure: A business model approach

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ABSTRACT

This paper contributes to the research in accounting and the debate about the nature of carbon footprint reporting for society. This paper utilises numbers and narratives to explore changes in carbon footprint using UK national carbon emissions data for the period 1990–2009 and six years (2006–2011) of carbon emissions data for the FTSE 100 group of companies and a case study that focuses on the UK mixed grocery sector. Our argument is that existing approaches to framing carbon disclosure generate malleable, inconsistent and irreconcilable numbers and narratives. In this paper we argue for an alternative framing of carbon disclosure informed by a reporting entities business model. Specifically, we suggest, that a reporting entity disclose its carbon–material stakeholder relations. This alternative, we argue, would increase the visibility of carbon generating stakeholder relations and avoid some of the difficulties and arbitrariness associated with framing carbon disclosure around a reporting entity boundary where judgements have to be made about responsibility and operational control.

1. Introduction

This paper is split into three sections. The first section considers the critical accounting literature on environmental sustainability and carbon footprint accounting. This literature is concerned with, on the one hand, accounting and its relation to modernity and the extent to which progress, as constructed in natural science and the social sciences, is fundamentally incommensurate with ideas of environmental sustainability and a reduction in carbon emissions from household and business activities in society. In addition it is a literature that also engages with the struggle to quantify a reporting entities corporate carbon footprint when a number of competing actors are setting the framing agenda. In addition, there is the difficulty of defining a reporting entity boundary because judgements have to be made about ownership, control and responsibilities. In these circumstances it is often the case that the numbers and narratives that arise are: malleable, lack consistency and cannot be reconciled from one level (firm) to another level (national economy). A third strand of the critical accounting literature is concerned with the way in which the aggregate corporate carbon footprint presents a material challenge to environmental sustainability. That is, the sheer scale and significance of carbon usage by humans and its implications for

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our environment should be reflected in accounting numbers so as to inform and identify appropriate interventions. Therefore, regardless of the challenges and difficulties arising accounting has the potential to generate challenging numbers and narratives that provide a platform upon which to structure managerial incentives, modify corporate behaviour and inform regulatory interventions. In this paper we argue that accounting has a positive role to play in identifying material carbon generating stakeholder relationships. Where these carbon–material stakeholder interactions might be best captured in the prism of a business model framework of analysis grounded in accounting.

The second section of this paper engages with the issue of carbon footprint reporting and measurement at a macro, meso and micro-level of analysis to explore the malleability, contradiction and the irreconcilable nature of carbon disclosures. Using a middle ground framework we consider how macro numbers and associated narratives on carbon emissions for the UK economy can be deconstructed to reveal aggregate emission trajectories and contradictory forces. At the meso level we review the changing pattern of carbon footprint disclosures across the FTSE 100 and note that only 62 companies disclose carbon footprint consistently over a six-year period (2006–2011). Our analysis of this group of reporting companies reveals that over this five-year period the aggregate carbon footprint has not changed. Moreover, that the corporate data disclosed (Scope 1 and 2) does not reconcile with national aggregates. At the micro level we employ data for firms involved in the UK grocery sector and reveal the malleability and contradictions associated with measuring carbon footprint.

The final section of this paper presents an alternative business model conceptual frame within which to locate carbon footprint disclosures. In recent years the accounting bodies such as Institute of Chartered Accountants in England and Wales (ICAEW, 2010) and European Financial Reporting Advisory Group (EFRAG, 2012) have been concerned with how a business model framework might enhance corporate financial disclosures and risk assessment. In this paper we argue that a business model can be conceptualised as an information genotype that broadly describes the operating activity characteristics of reporting entities because they share similar stakeholder relationships. The information generated out of interactions with various stakeholders variably impacts upon the financial and physical characteristics of reporting entities within their respective business model. Our objective is to employ this loose business models conceptual framework to argue the case for the disclosure of material carbon generating stakeholder interactions. Such disclosures, we argue, increase the field of the visible and can be employed to generate alternative numbers and narratives that inform interventions and policy framing. We are motivated by Hopwood's (2009) call to move away from abstract schemes to explore how alternative systems of disclosure might inform understanding and insight even though they may not be completely 'adequate'

> 'The research traditions now established in the area of the organizational and social analysis of accounting provide a good basis for looking beyond abstract schemes for change and improvement to explore the actuality of their functioning and operations, and to use this knowledge for the more realistic design of approaches to changing both the significance which environmental and sustainability considerations play in the corporate sphere and our ways of gaining insights into the adequacy or otherwise of these'. (Hopwood, 2009, p. 439)

And challenged by Gray's (2010) suggestion that the key is to re-habilitate experiments around what sustainability accounting might look like and how numbers can be utilised to construct critical narratives about organisation commitment to a less carbon intensive future.

> 'The key, it seems, will therefore be to re-habilitate the experiments considered in 'What does accounting for sustainability look like?' as potential sources of counter narratives, as part of a multiple and plural expression of sustainability in organisations'. (Gray, 2010, p. 59)

2. Carbon footprint: framing and measurement

Think-tanks including the World Resources Institute (WRI), World Business Council for Sustainable Development (WBCSD) and International Organisation for Standardisation (ISO), have established rules and tools for measuring and reporting carbon emissions: their Greenhouse Gas Protocol and ISO 14064 becoming the *de facto* standards of corporate carbon footprint reporting, as recommended by government environmental departments (Australian Government Department of Climate Change & Energy Efficiency, 2010; United Kingdom Department for Environment, Food and Rural Affairs, 2009). In recent years accounting has also entered the contested field of carbon footprint measurement and reporting. While the natural and social sciences, economics and politics compete for academic control over this calculative space, environmental accounting research has also made its specific contribution (Mathews, 1997).

A significant amount of critical treatment is directed towards the ability – or otherwise – of accounting to faithfully represent the physical impact from reporting entities emissions on the environment. The packaging of greenhouse gases into proxies of carbon dioxide emissions via commensuration (Bowen & Wittneben, 2011) is a developing science and national and international protocols tend to lag behind advances in measurement (Lohmann, 2009; MacKenzie, 2009). While acknowledging these criticisms, non-scientists encounter difficulty when trying to evaluate the impact of a physical quantity of emissions expressed in tonnes or other units of measurement. For these users of accounting information, temporal gains in accounting accuracy may offer limited utility. Even for those with appropriate expertise, the connection between organisational carbon footprint and planetary stability may be impossible to reconcile (Gray, 2010; Hopwood, 2009; Lamberton, 2005). An alternative approach suggests that, unlike the natural sciences, accounting is socially constructed (Hines, 1988) offering 'a way