

Studies in the Economic Analysis and Regulation of Environmental and Social Problems

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Abstract

The twelve refereed publications (drawn from over eighty-five journal articles and a number of books and books chapters) which form the basis of this PhD each deal with an environmental and social problem that poses some regulatory or competition issues. They may be contended to have arisen due to a range of market failures that can warrant intervention. In some cases they are argued to challenge market conduct and/or regulatory practice. The selection of papers is in my judgement broadly reflective of the range of topics investigated throughout my research career and also chosen to include early work as well as some of my most recent and ongoing work. A wide range of research methods are used and all of the publications are to varying degrees considered to be policy relevant. The submitted work includes primarily theoretical or conceptual studies, critical policy assessments, as well as studies reporting empirical work drawing either on quantitative or qualitative modes of analysis, or some combination of the two. Most of the research has been undertaken in a UK setting though some took place in a South African setting and all are explored within the framework of the available international literature.

The first part of the thesis commentary provides an introduction with personal background, an explanation of the thesis structure and a review of the relevant literature, highlighting the key work informing the selected articles and explaining the research context in which they evolved and developed. Then the commentary presents a reflective critical analysis of the selected articles. Finally the commentary unfolds a critical appraisal of the contribution of the published works to the field of study (including citation analysis) and in relation to some of the articles a more qualitative discussion is presented.

Chapter One

Introduction and Outline of the Research

The Basis of the Submission

The thesis is based on a critical analysis of work featuring in twelve peer-reviewed academic journal articles that are in my judgement broadly reflective of the topics investigated across the entire course of my research career and feature some early work as well as some of my ongoing work. The time period of publication for the selected articles is between 1999 and 2016. These publications are drawn from two solo research projects and six collaborative research projects working in the domains of environmental and social policy. None of the collaborative research projects involved any research students and two of the collaborative projects were partially supported by external grants and awards.

All of the presented work emerges from a viewpoint that environmental and social problems interest and challenge economists seeking to inform or devise appropriate policy prescriptions and regulatory interventions¹. Such problems have been the focus of my professional life and then academic research endeavour over several decades. They are often linked to, or occasioned by, difficult to resolve market and government failures warranting the consideration of ‘structural’ and/or ‘conduct’ level regulatory interventions (Kay and Vickers 1990). The former relates to regulation of market structure (e.g. entry/exit issues) and conduct regulation relates to the behavior of producers and consumers (e.g. price controls, quality standards). By regulatory intervention is meant not just the placing of restrictions on behaviours that generate undesirable activities, but also actions comprising an enabling and facilitative role seeking to, for example, avoid chaos in some “uncontrolled” markets

¹ Viscusi, Vernon and Harrington (2005) categorise *both* environmental and social problems (as considered in this thesis) as occupying the domain of ‘social regulation’.

(Baldwin, Cave and Lodge 2010). The environmental and social policy problems considered in this thesis have been addressed via economic analysis though they are also amenable to non-economic analyses. They could, for example, be underpinned by qualitative discourses as in political analysis of public policy and historical narrative assessments, or, they could be subject to empirically grounded scrutiny drawn from statistical analysis, or the application of management science techniques. While I have recognized the potential for such approaches and am aware of the research output from these disciplines my expertise does not lie in these fields and so their contribution for me has been largely to provide context and background. I have analyzed these environmental and social problems principally in the terms of standard neoclassical economics and thus considered them open to the potential application of various regulatory policy instruments. This is the principal analytical framework underpinning the body of submitted work. That said, some of the work presented does depart from purely standard neoclassical economics and embraces some other economic traditions. These instances are highlighted as each work is critically reviewed.

The papers considered in this thesis form a selection drawn from over 85 peer-reviewed journal articles plus a smaller number of books and book chapters. Though I have made contributions to work in other areas, the twelve papers form a cohesive subset under the thesis title and are reflective of key areas of my academic research career working either alone or with some of my serial academic collaborators, excluding any research students. Thus none of the submitted work considered herein forms part of any other individual's PhD research endeavour. The publications submitted feature work with collaborators where I have had a very long-standing research partnership and also include recent collaborators with whom I will likely be working into the future for many years to come. These collaborations were formed via long-standing working relationships, staff seminar and conference networking and also opportunities arising from funded research visits overseas.

The papers selected for inclusion in this thesis feature considerable variety in style, content and methodology. They include primarily theoretical or conceptual studies, critical policy assessments, as well as studies reporting empirical work drawing either on quantitative or qualitative modes of analysis, or some combination of the two. A categorization of their methodological contribution to the study of market failure is presented in Table 1 following the setting out of the publication and author details of the submitted work. The primary contributions to knowledge from these papers are:

1. One of the earliest economic critiques of the use and abuse of the term ‘sustainable tourism’ in the light of the concept of tourist carrying capacity.
2. An early assembly of various strands of evidence highlighting the market impact of differences in land and infrastructure ownership and (environmental) regulatory regimes in the UK and the EU.
3. Primary empirical evidence from the UK on the relationship between household income and car usage/emissions.
4. Theoretical and empirically informed biological and economic arguments which suggest that the development of regulated markets in the service of rhinoceros conservation would need to depart significantly from the general ‘marketization’ models for endangered species products as they currently feature in the extant academic literature.
5. A simple conceptual model providing a guiding framework to discourse on urban sexual consumption and a recasting of economic work on the market demand for paid sex as a conventional optimal consumption problem in the presence of risk.
6. A developmental model of urban gay districts based on the ‘New Economic Geography’.

7. A formal consideration of the phenomenon of addict death within the economic analysis of illegal drug markets

8. The first published evidence on the distribution and effectiveness of state subsidies to the film and television industry in South Africa.

My Personal Research Background

Although a qualified teacher of economics I went on to study Transport Engineering and Planning at Masters Level and worked professionally for civil engineering consultants. I was primarily involved in the economic and environmental assessment of infrastructure and traffic/demand forecasting working mostly for UK Government Department of Transport projects. I have remained a Chartered Member of the Institute for Logistics and Transport for over 20 years. I then took up a Research Fellowship in the Economics of the Greenhouse Effect (now typically labelled in public and scientific discourse as ‘Climate Change’) in 1990 preparing funding bids and supporting other researchers. This background influenced my interests in policy relevant environmental economics and its methodologies and techniques. I also re-directed some of these methodologies and techniques e.g. stated or expressed preference analysis and ‘hedonic regression’ to help explore various topics in social economics and policy (see, for example, Cameron and Collins 1997, Butler-Smith, Cameron and Collins 1998, Cameron, Collins and Thew 1999, Cameron and Collins 2000).

While I have continued to develop this interest in empirically informed social economics, I have now found that environmental and social policy problems have increasingly and necessarily overlapped over time (e.g. climate change, flooding, and wildlife conservation). Such overlap is now reflected in some of my more recent and ongoing research work in encouraging household recycling (Collins, O’Doherty and Snell 2006) where ‘social capital’

related variables are found to be significant. It is also evident in work on climate change mitigation and also my research in resource conservation in South Africa, where there are deep seated social problems connected with income inequality that are contributing to the problem of wildlife poaching. A reading of this academic background could be construed as being suggestive that my research work was always planned, logically developed and sequenced. In truth, much of my work features substantial elements of more opportunistic development of research activity in the light of the vagaries of funding, serendipitous meetings with future collaborators and pressures from competing teaching and management roles.

Since my appointment as a university lecturer my understanding of the subject has been broadened by conferences, participation in academic networks and reading the relevant contemporary academic literature. Informed by this experience, I remain primarily interested in economics at practical and policy relevant levels and generally subscribe to the view that research questions should have real world relevance. My interest in how environmental and social policy problems can be addressed by economic analysis and informed regulatory interventions flows out of this personal background and set of beliefs. This eclectic professional and academic background has given me a well-rounded grasp of the reasons why many environmental and social problems are difficult to resolve and why effective regulatory interventions can be similarly difficult to devise and implement. My approach to research is pragmatic. It steers a middle ground between positivist and social constructionist traditions, drawing on quantitative and qualitative techniques depending on the precise nature of the relevant research questions within each paper. I explicitly consider the methodological choices made in the context of each submitted publication as the critical analysis of the work is unfolded in Chapter Three.

In essence, I am an economist, but one that works extensively in the context of policy-relevant environmental and social applications and who is operating fully within the ethos of an integrated business school. Accordingly my publications also tend to speak in most cases to an audience in other cognate disciplines at the boundary of, or overlapping with, economics. As such the building and development of novel mathematically elegant formal economic theory is typically not the centrepiece of my published contributions, though some work that is close to this description is included in the selected publications and there are some others in my wider body of published work. Furthermore in some of the submitted publications there are some simple theoretical sketches and conceptual models, but these are primarily intended to be accessible to a multidisciplinary readership. Overall, it would be reasonable to assert that typically I do utilize economic theory in all my published work as an essential point of reference and point of departure, even for my more empirically founded and/or policy-relevant work.

All the environmental and social problems considered in the thesis have been analyzed primarily (or at least initially) through the common lens of standard neoclassical economics, though in some cases this has been explicitly augmented or extended by pragmatic insights. These have often been drawn from more heterodox economic traditions. In particular, some of the articles have been informed by ideas and modes of thought in institutional analysis, evolutionary economics and some elements of public choice economics. It is, however, difficult with precision to unambiguously identify where orthodoxy ends and more heterodox influences begin, or at least intervene. Further in some papers (especially **publication 12**) the heterodox influence is made explicit but in others it is not always clearly articulated or rendered explicit. In some works the heterodox influence became clearer to me *ex post*, in the course of the retrospective critical review undertaken for this thesis.

Publications Submitted

The publications are grouped into those pertaining to environmental policy and social policy matters. They are then presented in chronological order with a brief indication of their specific contribution to the literature. For the co-authored works an indication is also given of my personal contribution to their production in terms of **(a)** design of the investigation, **(b)** conduct of the research, **(c)** analysis of the outcome **(d)** preparation of the work for publication.

Environmental Problems and Policy

1. Collins, A. (1999) Tourism Development and Natural Capital, *Annals of Tourism Research*, 26(1) 98-109.

Originality/value: *Provided an early standard environmental economic assessment of the use and abuse of the term 'sustainable tourism' in the light of various gradations of the concept of sustainability. It concludes that much of what was described as sustainable tourism was simply labelled as such as a commercial marketing mantra and that effective operationalization of the concept actually requires active regulation of tourist numbers.*

2. Asteris, M. and Collins, A. (2007) Developing Britain's port infrastructure: markets, location and policy. *Environment & Planning A* 39(9) 2271-2286.

Originality/value: *The study counterpoints the UK government position that prevailed at the time on port infrastructure development with the views and evidence presented by key players in the port and shipping industry. The respective standpoints are shown to be markedly divergent and the principal conclusion is that market-led responsiveness is of critical importance in determining the nature and location of port developments. It argued that*

unless shippers are provided with sufficiently flexible facilities in the locations they prefer, Britain could become little more than an appendage to the major North European continental ports.

Personal Contribution: In respect of (a) to (d) the work was undertaken jointly throughout from inception to final submission though with Collins leading on the assembly and presentation of the supporting data.

3. Asteris, M. and Collins, A. (2010) UK container port investment and competition: Impediments to the market. *Transport Reviews* 30(2) 163-178.

Originality/value: *The work identified a number of impediments to competition in the port market namely, the treatment of sunk cost, environmental constraints, availability of subsidies to UK competitor ports and the nature of inland network infrastructure charging. These were analysed with a view to identifying policy prescriptions that were consistent with avoiding competition distortion effects arising from international differences in the provision of state funding for port infrastructure.*

Personal Contribution: In respect of (a) to (d) the work was undertaken jointly throughout from inception to final submission.

4. Asteris, M., Collins, A. and Jones, D. (2012) Container port infrastructure in North-West Europe: Policy-level modelling. *Journal of Policy Modeling* 34(2), 312-324.

Originality/value: *This work is distinctive from earlier work insofar as it analyses container port infrastructure, shipping flows and congestion patterns to support policy level modelling rather than more micro-focused quayside-level modelling and doing so against a background of economic downturn and recovery.*

Personal Contribution: Aspect (a) was jointly conceived by all authors. For aspect (b) Collins and Asteris contributed to the network design upon which was based the model simulation template implemented by Jones using network simulation software. Aspect (c) was jointly analysed by all authors. For aspect (d) the paper was equally jointly prepared by all co-authors, each leading on separate sections of the paper and then all working on full combined drafts.

5. Cox, A., Collins, A. Woods, L. and Ferguson, N. (2012) A household-level environmental Kuznets curve? Some recent evidence on transport emissions and income. *Economics Letters* 115, 187-189.

Originality/value: *The first study to use detailed survey data to show no evidence of an Environmental Kuznets Curve (EKC) for household transport emissions in the UK. The evidence shows that richer households still do not choose to internalize the social cost of polluting by vehicle emissions.*

Personal Contribution: For aspect (a) Collins conceived of the economic study following discussions with Woods (a civil engineer) who had previously conducted the survey and held the data with Ferguson (a civil engineer) for other traffic engineering research purposes. The research design for this specific study was refined and further developed following discussions between Collins and Cox. Aspects (b) (c) and (d) were jointly undertaken by Collins and Cox, though with Cox leading on the econometric analysis when this was required by a reviewer following initial report comments. The initial submitted paper contained no formal econometric analysis.

6. Collins, A., Fraser, G. and Snowball, J. (2016) Issues and concerns in developing regulated markets for endangered species products markets: The case of rhinoceros horns *Cambridge Journal of Economics* [doi:10.1093/cje/bev076]

Originality/value: *This paper critiques the orthodox economic prescription for reducing poaching of rhino horns and provides arguments and evidence that a regulated market approach would actually need to sustain a high market price for rhino horn to secure viable and sustainable rhino herd numbers in South Africa.*

Personal Contribution: In respect of (a) to (d) the work was undertaken jointly throughout from inception to final submission though with both Collins and Snowball conducting the contextual interviews and Collins preparing the initial full paper draft which was then subject to revisions in many iterations by all co-authors on the path to the final submission.

Social Problems and Policy

7. Collins, A. (2004) Sexuality and sexual services in the urban economy and socialscape: An overview *Urban Studies* 41(9) 1631-1641.

Originality/value: *The work sets out a simple conceptual model to provide some guiding framework to discourse on urban sexual consumption.*

8. Collins, A. (2004) Sexual dissidence, enterprise and assimilation: Bedfellows in urban regeneration (2004) *Urban Studies* 41(9) 1789-1806.

Originality/value: *The first work offering a pragmatic, principally economic perspective on the body of work analysing both the genesis and development of urban 'gay villages'. Harnessing concepts in the 'New Economic Geography' it finds that, even with differing*

historical roots and widely differing levels and forms of municipal support, a recurrent developmental pattern seems to be discernible.

9. Cameron, S. and **Collins, A.** (2006) Addict death: A lacuna in the welfare economics of drugs policy. *American Journal of Economics and Sociology* 65(4) 963-970.

Originality/value: *The first study to consider the full implications of the problem of the death of addicts which had been, hitherto, ignored in the economic analysis of policy toward drugs. The work suggests that drug dealers can, in theory, play an important role in sustaining the lives of addicts. It is argued that this ought to be taken into account in policy enforcement leading to some potentially radical changes to conventional policy proposals.*

Personal Contribution: In respect of (a) to (d) the work was undertaken jointly throughout from inception to final submission.

10. **Collins, A.** and Judge, G. (2008) Client participation in paid sex markets under alternative regulatory regimes. *International Review of Law and Economics* 28, 294-301.

Originality/value: *Risk, income and other factors are shown to influence the pattern and intensity of leisure time usage, which is a key requirement for client participation in paid sex markets. The work draws out the regulatory implications of this reasoning.*

Personal Contribution: (a) Collins conceived of the study and research design. Aspects (b) and (c) were jointly undertaken. For aspect (d) Collins prepared the initial full draft which was then worked on by both authors on the path to final submission.

11. **Collins, A.** and Judge, G. (2010) Differential enforcement across police jurisdictions and client demand in paid sex markets. *European Journal of Law and Economics* 29(1) 43-55.

Originality/value: *The first economic study to acknowledge that police officer priorities and preferences will differ such that the discretion applied to the enforcement of prostitution offences will vary spatially. Motivated by increased policymaker interest in considering demand-side policies, such as applied in Sweden (Levy 2014), a simple model was developed to analyse how clients will be likely to respond to enforcement level differences across jurisdictions.*

Personal Contribution: For aspect (a) Collins conceived of the study and research design. Aspects (b) and (c) were jointly undertaken. For aspect (d) Collins prepared the initial full draft which was then worked on by both authors on the path to final submission.

12. Collins, A. and Snowball, J. (2015) Transformation, job creation and subsidies to creative industries: The case of South Africa's film and television sector. *International Journal of Cultural Policy* 21(1) 41-59.

Originality/value: *The first study to empirically analyse the effectiveness of financial incentives provided to the film and television sector in South Africa in terms of their stated objectives of job creation, skills and knowledge transfer, and the attraction of foreign direct investment.*

Personal Contribution: In respect of aspects (a) to (d) the work was undertaken jointly throughout the research from inception to final submission, though with Collins leading on the analysis of the film incentives data and Snowball leading on the multiplier analysis. Collins and Snowball undertook all the supporting interviews jointly.

Table 1: Approaches and Coverage of Submitted Publications

Publication/Approach	Externality/Public Good	Competition/Regulation Issues
1: Theoretical/Conceptual Model development	Ecological degradation, Habitat loss, Landscape deterioration	Regulation of tourist numbers
2: Policy critique: Secondary documentary analysis and descriptive data analysis	Ecological degradation, Habitat loss, Landscape deterioration	UK Regional and European Port Competition
3: Policy critique, Secondary documentary analysis and descriptive data analysis	Ecological degradation, Habitat loss, Landscape deterioration	UK Regional and European Port Competition
4: Network Model Simulation, Scenario Analysis		UK Regional and European Port Competition
5: Data disaggregation and descriptive analysis, econometric analysis	Local air quality, Climate change	
6: Policy critique, secondary documentary analysis, secondary data analysis, Interviews with key informants, theoretical analysis	Megafauna species conservation and extinction, Biodiversity loss	Regulation of wildlife products trade
7: Theoretical analysis	Community cohesion, Quality of urban life, Societal wellbeing	Regulation of commercial sex work, Regulation of gay entertainment venues and enterprises, Moral regulation
8: Theoretical analysis/conceptual model development, Telephone interviews with key informants, secondary documentary analysis	Community cohesion, Quality of urban life, Societal wellbeing	Regulation of commercial sex work, Regulation of gay entertainment venues and enterprises, Moral regulation
9: Policy critique, Theoretical analysis	Minimization of community nuisance, Community cohesion, Societal wellbeing	Regulation of illicit narcotics markets
10: Policy critique, Theoretical analysis	Minimization of community nuisance, Community cohesion, Quality of urban life, Societal wellbeing	Regulation of commercial sex work
11: Policy critique, Theoretical analysis	Minimization of community nuisance, Community cohesion, Quality of urban life, Societal wellbeing	Regulation of commercial sex work
12: Policy review and critique, Elite interviews, Secondary data analysis, index construction, Economic impact assessment	Community cohesion	Subsidy allocation, Competition among film production companies

Source: Author

Co-authors

Asteris, Cameron, Cox and Snowball have provided emails from their University email accounts attesting to the above balance of work in the relevant publications above. Judge died in 2015.

Structure of Thesis

A PhD by publications thesis/commentary clearly differs from a standard PhD thesis. In the former case, the research questions, background and specialist literature reviews, methodology and analyses of results are already contained within the submitted publications. Accordingly, this commentary serves principally to highlight the main contributions advanced in those works and set out a retrospective critical analysis of aspects of those works accompanied by a critical assessment of the contribution of the submitted publications. These sections might be expected to broadly equate to the substance of the introduction and concluding remarks chapters of a standard PhD thesis.

The next chapter presents a conspectus of the relevant literature underpinning and informing (directly or indirectly) the work contained in the submitted publications. For each of these submitted publications an attempt is made to indicate both the salient extant literature that prefaces the work or those studies that simply serve as a prelude to the research and also, where possible and relevant, to indicate the main thrust or body of ideas that feature in the subsequent body of literature. Chapter Three provides a critical analysis of the submitted publications briefly highlighting the core features of the work, reflecting on some shortcomings evident with hindsight to the author and also raising some other features of the work that may warrant further scrutiny. Chapter Four sets out a critical appraisal of the contribution of the submitted published works drawing on citation analysis and some other

qualitative indicators of standing or merit for the work. A brief summary and some final remarks serve to conclude in the final section.

Chapter Two

Conspectus of the Literature

Overarching Concepts

Adopting an economic lens, the environmental and social problems analysed in this thesis commentary may be contended to have arisen due to a range of market failures² and potentially warranting intervention. In theoretical terms they arise because the systems of competitive markets that comprise an economy (and featuring some underlying strong assumptions) do not fully correspond with the requirements of Paretian efficiency (Bator 1958). Further, where regulatory policy interventions are advanced or implemented, to address such failures they may, if not skillfully designed, introduce in some markets and cases, various policy outcomes that have serious unintended consequences³. This particular situation is argued to be relevant to some of the problems analyzed in **publications 6, 10, 11 and 12**. All of the problems considered in this thesis feature market failures such as the exercise of monopoly/market power (**publications 2, 3, 4 and aspects of 12**) but principally relating in the vast majority of cases (partly, or wholly) to various kinds of externality (Buchanan and Stubblebine 1962) or activities with ‘public good’ (or ‘public bad’)

² While all the generic market failures raised are well-known and have been previously considered by other researchers in many other contexts, those addressed in the submitted works arguably relate to (at the time) relatively under-researched applications or are ones where some novelty in the economic perspective is advanced.

³ As a result of unintended consequences Austrian School economists (such as von Mises, 1949) do not consider regulation to be benign. For von Mises (1949) addressing unintended consequences means considering a choice between doing away with the offending regulation or introducing new ones to compensate for or counteract the existing regulation. He observed that the latter course is commonly chosen, such that regulations simply beget more regulations to the increasing detriment of market functionality (Galloway 1997).

(Samuelson 1954, 1955) or ‘club good’ aspects (Buchanan 1965). An overview of all this founding theoretical work is provided in Leach (2004).

The state and markets have arguably been entwined in a long term process of co-evolution and interaction for centuries in some mature capitalistic societies and for decades in others economies at earlier stages of economic development (Fligstein 2002). Over time economic theory has also emerged to justify regulatory interventions in such markets, including those motivated by altruistic desires to serve the ‘public interest’ (Pigou 1920). There is now a wide range of disciplinary perspectives on regulatory interventions to address market failures and these offer a variety of contested viewpoints (Baldwin, Cave and Lodge 2010). However, dispute and alternative viewpoints do also feature within any single discipline. This is the case for the subject of economics in which the twelve selected articles are principally situated. Within economics the arguments supporting regulation are considered to falter by some individuals simply because there is no completely unambiguous or objective basis for identifying the public interest and also because regulators are argued to not necessarily act (for various reasons) as neutral arbiters (e.g. Stigler 1971, Posner, 1974, Becker 1985). These are key contributions to the so-called ‘private interest’ set of regulation theories. All are negatively disposed to significant and increasing regulation and all are founded on the importance of competition for power in explaining the effectiveness of regulatory outcomes. For Stigler (1971) the key concern is the emergence of ‘regulatory capture’ and ‘monopoly control’ of sections of government or government agencies by dominant corporate bodies. It is for such corporate bodies he considers regulation to principally serve and benefit given, “...government can grant exemption from antitrust legislation, grant subsidies or ban the entry of competitors directly so that the level of prices rise. The government can maintain

minimum prices and restrict entry more easily than a cartel. The government can suppress the use of substitutes and support complements.” [den Hertog (2010) p.22-23.]

Posner (1974) finds more merit in interest group competition explanations for regulatory outcomes and such an explanation was developed further by Becker (1985) where capture theory is rejected. Becker’s (1985) explanation is premised on competition between multiple groups (excluding average citizens) to utilize the ‘coercive power’ of government to create rules and regulations that help some industries or companies and harm others. A fuller overview of these economic theories of regulation is provided by, *inter alia*, Priest (1993), Hägg (1997) and den Hartog (2010).

Notwithstanding such work and premised on an explicitly public interest case for regulation Baldwin and Cave (1999) set out a number of justifications for regulatory interventions into free markets. All can be characterized as correcting some form of market failure. All the environmental and social policy problems considered in this thesis can be readily characterized as market failure issues and analyzed via the toolkit of standard neoclassical economics.

In connection with **publications 1 to 6**, the economic analysis of such regulatory interventions to address environmental resource degradation and pollution has a long and distinguished history. The relevant chronological context is set out in Kula (1998) and Pearce (2002). Across environmental and social policy, a public interest framework has been used by many researchers to develop more nuanced and detailed studies of particular market contexts and potentially to inform the content, implementation and assessment of market regulation. For a subset of the social problems considered in this thesis (**publications 7, 8, 9, 10 and 11**), however, I also show that there is a societal or moral regulatory dimension present (Ruonavaara, 1997, Hunt, 1999, Critcher, 2009) and associated with some goods that

have reputational impacts (Della Giusta, Di Tommaso and Strøm 2009) or are ‘stigmatized’ goods/services (Immordino and Russo 2015). Arguably, these more atomistic and fluid social/moral regulatory forces are not easily directed by government or other regulatory bodies, though in history many have been absorbed to some degree within various political party manifestos across the globe.

Overview of the Specialist Literatures – Environmental Problems and Policy

For **publication 1** clearly the whole raft of literature emanating from the source of the ‘sustainable development’ (SD) concept – the ‘Brundtland Report’ (World Commission on Environment and Development (WCED) 1987) – prefaces the work. In terms of the general understanding of the concept that influenced **publication 1**, Barbier (1987) set out an early detailed exposition of the concept and Barbier, Markandya and Pearce (1990) formally unfolded out how weak to strong sustainability concepts might be implemented in project or policy evaluation.

Yet despite this and other work Lélé (1991) found a profound lack of consistency in interpretations of SD in political, policy and much academic discourse and suggested that if the concept was to have “...a fundamental impact, politically expedient fuzziness will have to be given up in favour of intellectual clarity and rigour” (p.607). In my judgement at the time, much professional and academic discourse in tourism was also not immune to such ‘fuzziness’, even within several articles in the *Journal of Sustainable Tourism*, some of which were critically dissected in **publication 1**, featuring the adoption of an explicitly economic perspective in a multidisciplinary academic environment. This is not to say there had not been, hitherto, much valuable work in tourism-environment interactions. Indeed many such strong contributions are duly cited in **publication 1**. Rather, this work exploited an

opportunity to directly address some of the fuzziness that had pervaded this particular disciplinary setting.

The post-1999 academic literature in sustainable tourism has exploded (see, for example the work surveyed in Lu and Nepal 2009). This survey included several contributions which developed the environmental damage costs, ‘tourist carrying capacity’ and ‘critical natural capital’ concepts featuring in **publication 1**. Other key studies that cite **publication 1** use it as (i) a key conceptual platform to build multi-objective decision support systems (see, for example, Carillo and Jorge 2006) and (ii) a guiding influence to motivate the construction of ‘satellite accounts’ that systematically record all the environmental consequences of tourism (Jones and Munday 2007).

More recent contemporary strands of research in sustainable tourism development have moved on and now draw more heavily on the development economics and policy literature. This more intimately entwines tourism in analyses supporting pro-poor growth and sustainable livelihoods (see, for example, Tao and Wall, 2009 and the work reviewed in Shen, Hughey and Simmons, 2008).

Prefacing publications 2, 3 and 4 is a body of work in economics pertaining to container ports and shipping. Stopford (1997) among others describes how, over recent decades, UK ports had undergone enormous improvements in technical efficiency as a consequence of developments in handling technology (especially containerisation) and the deregulation of dock labour (Davis, 1988). This has been accompanied by a significant shift in traffic from West Coast to East Coast ports as trade deepened with the European mainland (Asteris, 1988). Importantly for the relevant submitted work, the majority of UK commercial ports are now in the private sector while Continental port infrastructure is typically publicly owned but latterly featuring increasing ‘corporatization’ (De Langen and Heij 2014).

The then UK Government department responsible for transport (DTLR 2001) identified, among other others, that "...the various deregulation and privatisation measures affecting ports in the last 15 years appear to have significantly improved the competitiveness of UK ports against their European rivals"(p. 9). Yet quality of service is typically deemed to be greater in Northern Continental ports due to greater reserve capacity, less congestion and a greater number of large-berth facilities. These features are traced in various developmental narratives of the organizational structure and status of container line shipping in Northern Europe such as Peters (2001), Slack, Comtois and McCalla (2002) and Notteboom (2004). These studies also describe how container lines seek to minimize costs by maximizing returns to scale derived from increased vessel size and feature a tendency towards horizontal integration by means of strategic alliances, mergers and acquisitions, all supporting the swifter development of new facilities.

At this juncture and in this context, **publications 2, 3, 4**, proceed to consider how various impediments (detailed in **publications 2 and 3**) to the development of commercially favoured new port capacity enhancements in the UK have combined to cause serious problems in competing with Northern Continental ports. The key currents of the subsequent literature (for example, as surveyed in Mangan, Lalwani and Fynes, 2008, Pallis, Vitsounis, and De Langen, 2010, Ng 2013, Ng and Ducruet 2013) relating to the development of port infrastructure has developed and picked up on some of the themes featuring in the submitted **publications 2, 3 and 4**. These include procedural and governance issues associated with advancing large scale port infrastructure (e.g. Greenwood and Newman 2010) and the linked tensions between commercial and environmental priorities in the face of a mix of public and private ownership of port infrastructure (Notteboom, Ducruet, and de Langen, 2009, Wilmsmeier and Monios, 2013, Yip *et al* 2014, Monios and Wilmsmeier, 2014, De Langen, and Heij, 2014 and Hyuksoo and Sangkyun, 2015).

Further currents in the relevant literature that have emerged over recent years relate, unsurprisingly, to sustainability and SD in the port and shipping sector (e.g. Greenwood and Newman, 2010, Lun 2013, Asgari *et al*, 2015, Lun *et al* 2016). Alongside this sustainability-focussed work there is now a growing series of arguably supportive studies measuring and valuing the negative externalities associated with this sector (e.g. del Saz-Salazar *et al* 2012, del Saz-Salazar, Garcia-Mendez and Merk, 2013, Rodrigues *et al* 2014).

Prefacing **publication 5** we can find that well before climate change had become a recurring central policy issue warranting a raft of regulatory changes, interventions and policy measures, there has been a long-standing research imperative to better understand the relationship between pollutant emissions and economic activities. Hitherto, empirical investigation into the relationship between economic activity and emissions (which has direct bearing to **publication 5**) has most extensively been undertaken at the sectoral and economy-wide level (see, for example, Cole, Rayner and Bates, 1997 and the considerable range of similar such studies surveyed in Dinda 2004, Stern 2004 and Nahman and Antrobus 2005 exploring a possible inverted (Kuznets) U-shaped relationship between income measures and environmental quality measures). The topic is controversial because of some economists framing the policy implications in terms of more rapid economic development (typically construed as an economic objective) itself being *the* solution ('policy instrument') to address pollution problems rather than contributing to it (see, for example, Beckerman, 1992). An excessive reliance on a single instrument may, however, be viewed as misguided given it is unlikely to be able to address all environmental problems in all cases (Gunningham and Sinclair 1999).

Further, such *laissez-faire* pro-growth framing of pollution problems arguably underplays the importance of 'ecological resilience'. This concept relates to the scope and time available for

achieving ecological recovery before irreversible damage occurs, caused directly by some specific pollutants at specific locations (Arrow *et al* 1995, Farber 1995). This is likely to be particularly the case for some vulnerable natural and urban environments afflicted by highly localized (though potentially also transboundary) point pollution. Policy development to achieve ecological recovery in good time may also be obstructed by information asymmetries and acquisition costs (Cabe and Herriges 1992) and the difficulties of achieving (international) collective action to avoid damage by some diffuse nonpoint pollutant sources, particularly when they arise in combination with some specific adverse meteorological conditions at some locations (Shortle and Horan 2001).

Relatively few environmental Kuznets curve-type studies have been undertaken at the household level, but those that have tend to focus on fuel choice for cooking and indoor air quality in a developing country context (see, for example, Pfaff, Chaudhuri, and Nye, 2004 and Kumar and Viswanathan 2007). In the specific context of vehicle transport emissions the only really comparable earlier study was that undertaken by Kahn (1998) whose analysis based on some Californian data did find evidence of an inverted 'Kuznets U' shaped hydrocarbon emissions relationship with income. The findings in **publication 5**, using some UK data, directly contradict those of Kahn (1998). This is perhaps indicative of UK/USA behavioural differences with respect to vehicle use. That said **publication 5** did use directly reported household income whereas Kahn (1998) used the median income from the post code (zip code) where the vehicle was registered. This indirect data source is likely to provide in econometric terms a rather 'noisy' proxy for actual household income. Hence, my judgement considers the results within **publication 5** to be likely to be more robust for simple methodological reasons.

While there has been a copious quantity of subsequent work investigating vehicle emissions generally and many other studies framed around inverted ‘Kuznets U’ shaped relationships, there are only two subsequent studies to the best of my knowledge that have explored the vehicle hydrocarbon emissions relationship with income since 2012. Liddle (2015) was able to use city-level data from 84 cities across the world to find an inverted ‘Kuznets U’ shaped relationship between GDP per capita and three different transport emissions, but not for urban transport energy demand. Using Portuguese time series data Sousa *et al* (2015) finds that Gross Domestic Product (GDP) and carbon dioxide emissions from the Portuguese transport sector exhibits an increasing monotonic relationship, indicating that economic growth *per se* will be insufficient to mitigate emissions over time in the manner seemingly envisaged by Beckerman (1992). The current paucity of such vehicle emission-household income studies is perhaps a testament to the difficulty and cost of acquiring high quality household survey data to specifically explore various environmental behaviours.

Prefacing **publication 6** the economic analysis and regulation of endangered species product markets had long entertained the possibility of some limited legalized trading in ivory to (i) provide some incentives for the sustainable management of elephants and (ii) on the demand-side to provide ivory users some access to limited supplies in order to reduce the incentive to push further underground a trade with smuggling and black market aspects (Barbier *et al* 1990, Bergstrom 1990). To combat such black market activity underpinned by wildlife poaching Kremer and Morcom (2000) advanced a solution predicated on the accumulation of a public stockpile of storable wildlife commodities. This would then enable the relevant government to threaten to dump them on the market if the extant population of the poached wildlife fell below a certain level. Essentially this might be labelled a time-consistent stockpiling policy. A similar line of thinking was also articulated in the specific context of the conservation of black rhino (Brown and Layton (2001). Focussing more generally across all

endangered species goods Fischer (2004) set out a simple model to explore whether limited legalized trade in otherwise illegal goods can be helpful for achieving policy goals like reducing poaching. Institutional and biological considerations were not really accorded any scrutiny in this economic analysis. Accordingly, it is Fischer's paper that is used as a key starting point in **publication 6** for teasing out the institutional and biological obstacles to legalized trading in the specific context of rhinos.

For ivory and rhino horn the key policy actors did, however, enact and sustain an outright ban via an 'Appendix 1' listing in the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) in 1973 and 1989. Stiles (2004) recorded how this led to unsustainably large elephant herd sizes in some Southern African countries alongside an inability to use the proceeds from ivory sales and sales of other by-products to directly finance conservation efforts. Hence, these countries continued to argue for the ban to be lifted. The possibility of this large herd size result for elephants was the subject of some earlier formal economic conjecture (Bulte and van Kooten 1996) but nevertheless, wildlife poaching of both elephants and rhinoceros has continued apace with black rhino pushed to 'critically endangered' status and white rhinos deemed to now be 'conservation dependent'. Stockpiles of ivory and rhino horn have, however, been accumulated across various Southern African countries and there is now much popular press and academic discourse calling for the lifting of trade bans in the face of continuing high levels of poaching. This pressure is perhaps also linked to the timing and location of the next meeting of CITES. This is scheduled to take place in Johannesburg, South Africa in September, 2016.

Overview of the Specialist Literatures – Social Problems and Policy

The work that informs **publications 7, 8, 10 and 11** can be traced back to a substantial body of work emanating from outputs formed in the tradition of Chicago School microeconomic

analysis of the household, household activities and various related societal issues or ‘problems’, including prostitution (see, for example, Fair, 1973, Becker, 1974, Edlund and Korn, 2002, Grossbard-Shechtman, 2003). They are uniformly treated as utility maximization problems subject to constraints. The guiding theoretical sketch in **publication 7** was produced to preface a body of research work exploring sexual consumption in urban environments. It departs from the Chicago school and moves on from this work in that it largely eschews the prime motivation of partner search in much of the cited foregoing work as household production, domestic management and childrearing. Instead it adopts a more flexible and arguably egalitarian framework where the arguments in a relationship utility function may comprise, *inter alia*, ‘marriage-type companionship’ (M) with any gender combination, and separately, sexual services (S). It prefaces **publication 8** which in the context of transitions from legal restriction through to legal permissiveness⁴ sought to explain how agglomerations of gay households and enterprises emerge and develop over time. It was also specifically informed by developments in the New Economic Geography (as propounded by Krugman 1997) and more distantly by the mode of presentation in the work of Rostow (1960). More recent work does pick up on the themes of decline and deconcentration raised in **publication 8** and in particular socio-spatial changes prompted by the use of social media and partner search by Internet and phone apps (see, for example, the work of Ruting (2008) and Ghaziani (2014ab)).

Publications 10 and 11, focus exclusively on the paid sex market, serving more (S) orientated consumers and specifically considering regulatory practice in this market with spatial regulatory aspects further drawn out in **publication 11**. Subsequent studies do develop these themes but in particular picking up on (i) the changing face of prostitution in the light

⁴ Albeit tempered at various junctures by spatial and temporal variations in social acceptance and moral regulation.

of significant market segments making more intensive use of social media and client/supplier search by the Internet and apps and (ii) the regulatory implications that arise (see, for example, the work of Cunningham and Kendall, 2011, Cunningham and Shah 2014 and Logan 2010)

Rather like sexual activity (and particularly prostitution) supply and consumption, in some social circles, illegal drug consumption and supply may also have stigma good aspects. Yet in other social circles it may well have ‘status good’ (Veblen 1899) or ‘positional good’ (Hirsch 1977) aspects. All may depend on the type of drug (e.g. cannabis versus crack cocaine) and the level of consumption undertaken by a given individual. Conceptually the economics of drug literature informing **publication 9** has been dominated by further Chicago School work, namely the ‘rational addiction’ model propounded by Becker and Murphy (1988). In this work the consumption of a narcotic is considered to be made with reference to a ‘consistent’ plan to maximise utility over time and where past consumption influences current consumption and current consumption influences future consumption⁵. Addicts are considered to plan cessation in relation to their stock of health capital. Becker and Murphy’s (1988) work on rational addiction focussed on the autonomous behaviour of addicts and neglected the role of supplying agents, though the latter has been considered from a business finance perspective by Levitt and Venkatesh (2000). Subsequent economic work on addiction does seem tied to exploring this model formulation through not always in relation to illegal narcotics. That said some cognizance of the line of thinking in **publication 9** that, in principle, more benevolent drug dealers can potentially play a role in sustaining the lives of addicts, does feature in Keefer, Loayza and Soares (2010) and Thoumi (2010).

⁵ The main alternative is based on Wagstaff and Maynard (1988) and is shown as Figure 1 in **publication 9**.

The academic work influencing **publication 12** draws on various strands of research but is primarily founded on a vast raft of general microeconomic theory relating to the efficiency impacts (allocative, technical and distributional) of subsidies and the justification of subsidies to the arts and creative industries in particular (see, for example, Peacock, 1969, Morrison and Westi, 1986, Fullerton, 1991, Austen-Smith, 1994, Throsby 1994). Establishing the worth of public financial support for various industrial sectors, but especially the creative industries sector, has proved a source of contention and debate among arts professionals, government and economists. Charges of a lack of appreciation of cultural values and empirical reductionism are often levelled against economists, so accessible context and policy-relevant studies from this community are relatively scarce. Indeed few economic studies have empirically explored public financial support for film projects (see, Mackenzie and Walls, 2013 for Australia, and Teti, Collins and Sedgewick, 2014, for Italy). **Publication 12** features at this juncture to provide a current South African case study and importantly one in a developing/middle income country with a legacy of other political and policy tensions.

In this conspectus, a brief overview of the overarching concepts drawn upon has been presented and which cut across the analyses of both environmental and social policy problems considered. The conspectus has then proceeded to briefly explore the specialist literatures relating to the specific environmental and social policy problems addressed in each of the submitted publications and summarised in Table 1. That literature pertains directly to the containment of negative environmental and community externalities and also to investigating competition and regulation issues in these contexts. The next section sets out a critical analysis of the submitted publications. This highlights in the relevant cases the methodological, conceptual or dissemination issues that arose during the generation of each article, or which arose in the aftermath of publication.

Chapter Three

Critical Analysis of the Submitted Publications

In the previous chapter the key works that informed, influenced or served as a prelude to the submitted publications were highlighted and the conceptual thrust of the subsequent stream of literature was also indicated where relevant. In this chapter an overview of the approach and content of all the submitted publications are considered with some measure of evaluative hindsight. Shortcomings and possible alternative approaches are raised with a view to potentially steering the direction of future work. More detailed critical attention has been deliberately directed to four of the twelve submitted publications (**publications 1, 6, 8 and 12**). The composition of this subset was selected to feature more detailed critical analysis of some early career research work and also to include some examples of my ongoing research activity.

Publication 1 is now a widely cited (see Table 2) and influential paper in the tourism literature. It is primarily a conceptual paper, albeit actually informed by field observation at what were personally described to me by local officials and guides as ‘sustainably managed’ tourism sites in China. In many instances, I found that these sites were overcrowded and showed indications of damage and erosion by virtue of repeated physical contact from very high tourist flows. Informed by this fieldwork the paper tried to systematically consider the use and abuse of the term ‘sustainable tourism’.

The resultant paper sought to set out what is required to conserve natural and heritage capital in many locations in order not to operate beyond the environmental ‘carrying capacity’ and in this specific context the ‘tourist carrying capacity’. The paper also sought to consider the meaningful application of various policy instruments in order to regulate tourist visitor

numbers. The work highlights that in practice there is often much industry and government resistance to the tenets of sustainability and consequently operational dilution of the term ‘sustainable tourism’.

The root problems with the term ‘sustainable tourism’ were specifically considered to result from (i) ambiguity and measurement issues with the underlying concept of tourist carrying capacity, (ii) geographical (displacement) spillover effects from tourist destinations and (iii) unbalanced or overly tourism-centric development policy. These are considered in turn.

In the case of problem (i) empirical technical assessments of tourist carrying capacity were found to be relatively scarce or highly dependent on very partial or proxy unidimensional metrics such as tourist vehicle capacity (e.g. Western 1986) which is clearly likely to bypass and neglect many other salient tourist-induced environmental damages. Early pioneering work in seeking to offer more comprehensive tourist carrying capacity identification was founded on (at the time) more time-consuming and complex fuzzy optimization approaches (Canestrelli and Costa 1991) and thus their adoption and diffusion at the time as usable analytical tools were very limited indeed. More recently, there have been methodological developments by researchers in Operational Research and Decision Science which ought to make problem (i) more tractable, such as more user friendly proprietary software for multi-criteria decision analysis. However, after **publication 1**, the direction of more recent work has increasingly fundamentally questioned whether tourist carrying capacity can ever be meaningfully used in “rigorous analysis” or widely accepted in any practical tourist destination management context (Buckley 1999).

Instead Buckley (1999) suggests greater confidence can be attached to a more narrowly defined ‘recreational capacity’ measure, while many others seem to suggest that the tourism/tourist carrying capacity concept is inferior to, and thus should be superseded by,

more composite, broader, but perhaps less economically intuitive approaches such as ecological footprint analysis (see, for example, Cole and Sinclair 2002, Gössling *et al* 2002, Hunter 2002, Hunter and Shaw 2007 and Patterson *et al* 2007, 2008). Unlike the earlier work in the analytical framework illustrated by **publication 1**, these footprint analyses cannot be readily integrated into economic valuation and cost-benefit analysis arithmetic. In essence the ecological footprint is simply a measure of the impact of human activities in terms of the physical area of biologically productive land and water required to produce the relevant goods/services consumed and also to assimilate the related wastes generated. Variants have also been developed in terms of carbon and water footprints. Reflecting on the sheer volume of ecological footprint work in the domain of tourism (many of which are published in ostensibly economic research outlets) might well indicate that this view has now gained considerable traction and momentum to become the dominant focus of analytical narrative and arguably the new popular conventional wisdom displacing pure reliance on cost-benefit analyses.

Regarding problem (ii) and (iii) various strategies can be applied singularly or in combination to address negative environmental externalities arising from mainstream (mass) or sustainable tourism destinations. **Publication 1** did explicitly note that this might involve more active and explicit policy consideration of less-damaging non-tourism sector activities or encouraging small-scale tourism on the basis that small-scale tourism might intuitively be viewed as more consistent with SD principles than mass tourism. Nonetheless, there remain advocates of environmentally sensitive mass tourism. Their case is premised on either limiting the spatial extent of the negative externality field by concentrating tourism activities in specific resort locations, or trying to spread the number of tourist more widely (tourism dispersal) in order to minimise damage at any given location. **Publication 1** presented some analysis and critique of both strategies but subsequent critical reflection and the passage of

time raise new considerations that have some bearing on tourism-environment interactions generally and ‘sustainable tourism’ strategy choice specifically.

For example, it would be valid to contend that **publication 1** did not adequately frame or temper the discussion by more nuanced reference to the underlying problems of managing the transition from mass to more sustainable tourism for countries and regions that have historically developed into tourism-dependent economies and which may have few, or no other viable alternative economic sectors to develop instead. Terrorist incidents in Tunisia and Egypt in 2015 (which caused tourist inflows to plummet downwards) unfortunately also serve to acutely highlight the extent of this tourism sectoral dependence in their economies and the limited scope for structural adjustment in at least the short to medium term.

Further, this framing issue and lack of nuance might arguably have been obviated or addressed if **publication 1** had featured some supporting close reference to empirical ecological assessments made at one or two specific case study locations and destinations. In hindsight this would have been feasible and arguably offered a stronger academic contribution. However, **publication 1** was originally conceived at the time simply as a pithy, mildly polemical attempt to transplant into the discourse of tourism research some of the more nuanced and challenging thinking that was beginning to feature in the environmental economics literature on the concept of SD. As such I made a conscious attempt to write it for a multidisciplinary audience. Though it is a theoretical and conceptual paper written by an economist, an attempt was made to minimise the use of algebraic symbolism and complex sketch graphics and I tried to carefully explain all economic jargon and terms.

It is standard practice for *Annals of Tourism Research* to require four reviewer reports from academics with different disciplinary backgrounds with the final decision being made by an appointed specialist coordinating editor. Given that only minor revisions were required I had

imagined that my attempted appeal to a multidisciplinary audience was broadly successful. Following publication there was, however, some clear dissent from this view and an anthropologist published a response (Velikova 2001) attacking this contribution to the journal for its reliance on economic theory and excessive use of mathematical formalism and sketch graphs. I was somewhat bemused by this contention given there was (in my view) only one carefully explained equation and one sketch graph of tourist demand over time set against the 'tourist carrying capacity' (supply). Velikova (2001) also suggested that I did not explain all the terms in the equation. In truth I had in the text where I suggested that the natural capital constancy expression could also be explained in 'per capita' terms. I simply divided the term for natural capital by N_j (the population at destination j). The key point to be acknowledged here is perhaps the subjective features and nature of communication. I thought I had communicated a message in one way but a reader had seemingly received the message differently.

That Velikova (2001) could not connect 'per capita' with N_j indicated to me the vast chasm in disciplinary understanding that actually existed in this field and I set out my rejoinder (Collins 2001) to highlight this point and argue that tourism research could perhaps do more to value subject specific contributions to the developing field of tourism-environment interaction. In hindsight it may have been possible to simplify and explain better, but in overall terms my subjective judgement remains that the paper achieved its limited but declared research aims and objectives. That said this interchange with Velikova (2001) did make me more mindful of what can really be assumed by economists. Accordingly, I have tried to be more careful in subsequent writing when unfolding arguments and providing explanation in my contributions to multidisciplinary journals. There are many such multidisciplinary journals featuring within the selected publications and there also many

more within my total body of published work. So this early experience has informed and helped shape my approach in writing for such audiences.

Publications 2, 3 and 4 focussed on the economic and physical development of UK ports and were intended to directly appeal to a shipping and port industry audience. Harnessing analysis of governmental documentation and commercial ‘grey literature’, secondary data analysis and exploratory simulation modelling, these studies examine (*inter alia*) different traditions in infrastructure development and competition for port developments in the UK and Europe and consider the market impact of differences in land and infrastructure ownership and (environmental) regulatory regimes in the UK and the EU. The upshot of our findings in **Publication 2 and 3** is that there seems to be a systematic advantage to Northern Continental terminal ports from the state support and procedural fast-tracking given to Container Port developments by their Governments and that UK Port developers have been hampered by the seemingly more market-orientated position of UK Government and their seemingly stricter adherence to EU environmental directives. Further, it is suggested that some smaller Northern English regional UK ports have taken advantage of this situation to claim scope for regeneration of activity as feeder ports even though it is premised on a decline in the competitive position of Southern UK terminal container ports.

The initial motivation for work in this field emerged from a teaching collaboration (Collins/Asteris) on an undergraduate course module in Transport Economics and informal discussions on local proposals for new Container Port facilities at Dibden Bay near Southampton (since refused on environmental grounds following Public Inquiry). Given some previous academic and professional work and publications we were invited to contribute to a call for evidence and provide comments on proposals for a new UK Department for Transport (DfT) port project appraisal methodology. We submitted detailed

comments which seemed to be duly ignored once the new Port Appraisal Framework for new infrastructure was officially published. There are a number of possible reasons why these detailed comments were ignored. These may have related to difficulties in simply sticking to a tight procedural timeline or perhaps related to more content based reasoning such as a perception of undesirable additional analytical complexity. Whatever the reasoning we still felt it was worthwhile to write up our comments as a short policy critique (Asteris and Collins 2006). From this platform of research we then moved on to look at the broader but related theme of competition and port infrastructure in the UK and Northern Continental Europe. Given the adoption of some key phrases and ideas, it is my judgement that the arguments in our policy critique were directly influential in the drafting of the new approach to evaluating port infrastructure once the old Port Appraisal Framework was abandoned after only a few years operation.

In hindsight the authors had perhaps not fully appreciated the various difficulties of working on this topic from the outset, given that much useful data is commercially sensitive and difficult to acquire and also that data availability is potentially hampered because the topic is very politically charged at UK/EU and UK regional political levels. These tensions are clearly set out in **Publications 2 and 3**. This made it difficult to find willing individuals in DfT to clarify their positions. Accordingly, we relied on multiple disparate secondary sources to accumulate supporting evidence in order to pursue our research questions in those papers. In some ways this could offer some measure of convergent validity to the findings but it adds caveats and complexity to the discussion. Arguably the methodological purity of clear interview transcripts and statistical analysis of a single rich dataset might have yielded a greater depth and robustness of findings, but this was not an achievable option at the time. **Publication 4** serves purely to set up an analytical framework to explore various future policy and regulatory scenarios as they arise.

Publication 5 is a short empirical paper motivated by long-standing debates and discussions on climate change and air quality objectives. The work explores the statistical relationship between vehicle emissions and the volume of driving undertaken by households in different income categories. This has implications for the design of policy interventions to regulate household-based transport emissions in the UK. It shows no evidence of an environmental Kuznets curve type relationship relating household income to emissions. As such it indicates that any policy imperative to reduce transport emissions from car owning households will not be likely to emerge automatically with real income increases. Further policy intervention would need to be more effective than the current context characterized by informal moral suasion and some tax breaks for low emission vehicles.

The data was drawn from a single survey in Scotland originally conceived to investigate the relationship between urban form and driving behaviour on the journey to work. I reviewed the data and saw some potential to re-interrogate it to explore the household income and vehicle emissions relationship. Looking back at the work more critically, it would clearly have been better to affirm the robustness of the findings by having a supplementary larger survey sample drawn from a wider range of geographical locations around the UK and ideally featuring a panel data or quasi-panel data element. Potentially this could form the basis of subsequent research work but it does provide a set of findings which could, in principle, be readily confirmed or refuted by others. Clearly the main problem obstructing such work is the cost of such primary data collection and practically this requires fairly substantial external funding to support research on this topic. As such **publication 5** could be considered to serve as a useful UK pilot study.

Publication 6 was based initially on one line of field research undertaken in South Africa over a period of four months in 2012 while holding a research fellowship at Rhodes

University. It was motivated by much press and academic discourse in the aftermath of a huge increase in rhino poaching incidents in South Africa in recent years. Increasingly the emphasis of this work has been on a need to change tack and try different policy solutions given that maintaining the business-as-usual regulatory and policy context does not seem likely to adequately obstruct the path towards species extinction.

Legalization of rhino horn trading has been actively considered and that line of thinking was discussed in the previous chapter. More recently Biggs *et al* (2013) argued for the necessity of such a radical proposal in tandem with some measure of regulatory activity harnessing existing technology able to discern the provenance of the rhino horns. The intention is to help obstruct ‘laundering’ of illegal ivory and the practice of illegal trading. Arguably this and other work is potentially overly confident on the scope for relying on technology in isolation to resolve the poaching problem and neglects consideration of the basic organizational architecture and market institutions that would need to evolve to support sustainable trading. These and some other points were set out in a short response (Collins, Fraser and Snowball 2013) and subsequently expanded into the full paper that became **publication 6**.

Before looking more critically at this work, it is worth noting that this contribution was always intended to serve to kick start an ongoing research agenda and as such it is preliminary and exploratory in nature. The paper seems to raise many awkward questions for regulatory design rather than provide comprehensive answers supported by clear direct evidence. The general lesson here is that research progress intended to inform policy may well be iterative and may well accumulate in small steps rather than giant leaps. Furthermore, the setting of the work has already been somewhat overtaken by events. Following a court judgement in late November 2015 (BBC News 2015), South Africa has now lifted the ban on the domestic trading of rhino horn in South Africa overturning a moratorium on the trade

imposed by the South African Government in 2009. This judgement was founded on two reasons, namely, lack of public consultation before the ban was invoked and a failure to stem the poaching crisis with the ban in operation. Though not a lawyer, this reasoning for the judgement did strike me as flawed in many respects. For example, public consultation is clearly not always present in other examples of public decision-making in South Africa. Furthermore, the implied legal explanation for the poaching crisis seems overly simplistic set against the more nuanced and multidimensional reasoning offered in **publication 6**.

The South African Department for Environmental Affairs has now appealed the decision at the Supreme Court in South Africa, but elements in Government are thought to support arguments for lifting the international trade ban in due course. It is likely to be discussed at the next CITES conference in Johannesburg, September 2016.

The lifting of the domestic trade ban means that the trade is certainly not currently supported by a careful consideration of the necessary institutions and mechanisms that typically feature in regulated domestic markets. Thus on reflection it is clear that **publication 6** does not explicitly consider the regulatory and policy implications of lifting a specifically ‘domestic’ trade ban. This needs to be addressed in subsequent work as it remains a somewhat puzzling question given we know that the significant active consumer markets for rhino horn products are in East Asia and not located in South Africa. We also know that formally the CITES international trade ban remains firmly in place. Hence, some analysis is warranted to consider whether lifting the domestic trade ban serves principally as (i) a necessary prelude to negotiations for the lifting of the international trade ban, (ii) some experiment in market testing and/or (iii) simply a means of making the international smuggling of rhino horn a little easier in the short-run.

In hindsight, **publication 6** could also have garnered greater policy relevance by simply featuring more explicit consideration of the apparent distinction between domestic and international trading. Perhaps more fundamentally, the force of the paper's conclusions are somewhat tempered by the fact that we do not really know what the annual demand for rhino horn actually is. This is a typical problem found in the analysis of illicit markets. Thus we had to be content with our assertions set out and detailed in the text that we have several sound reasons to believe this annual demand is large, growing and way beyond the biologically feasible level of supply that could actually be sourced sustainably. Accumulating market demand information (however approximate) would clearly bolster the evidence base for future work and support greater policy influence and resonance. Very recent evidence by Di Minin *et al* (2015) estimates "adequate" protection costs in Southern Africa with a full ban (domestic and international) in place to be \$147M per year. They estimate profits from legal trade (with asset protection in place first *as per* the recommendations also made in **publication 6**) to be of the order of \$717M per year. That said the statistical basis of this work emerges not from a price-quantity (market) modelling exercise but rather, given the absence of such data, a pragmatic and empirically-driven single equation poaching model. As such it is likely the model specification and scope for drawing policy implications would be likely to be strongly challenged by those schooled in more orthodox econometric analysis of markets.

Inevitably securing the will and permissions to clearly identify the provenance (by DNA testing) of rhino horns in some consumer markets, in order to present strong evidence in a legal setting, also remains problematic and possibly intractable without substantial external funding and resources.

A further oversight in **publication 6** relates to a neglect of the economic linkages in the market for poached elephant ivory and poached rhino horn. It has become apparent that poaching gangs do move between species given the mixed hauls of ivory and rhino horn discovered by security forces combatting smugglers (see, for example, BBC News 2010). Given the price differential between elephant ivory and rhino horn and that elephant herds are far easier to find and attack it seems likely that for some gangs, ivory is poached to sustain income in between the fewer intelligence supported rhino poaching expeditions.

Publications 7, 8, 10 and 11 collectively address the development and regulation (economic, spatial and moral) of commercial, quasi-commercial and non-commercial sexual and relationship markets for heterosexual and homosexual individuals/consumers. Unlike most other work the market demand for paid sex is principally recast as a conventional optimal consumption problem in the presence of risk. The work is premised on the contested view that given human nature, complete abolition is an impracticable and unworkable regulatory objective.

Publications 7 and 8 feature in the same journal special issue and both explore aspects of urban sexual consumption. The former work presents a simple conceptual model based on Lancaster's characteristics analysis (Lancaster 1966ab) that contrasts the different resource constraints in urban and rural areas associated with more sexually orientated relationship partner search and more marriage-type companionship relationship partner search. The latter work sets up an evolutionary developmental model of urban gay districts in England.

In hindsight both papers might well have better anticipated the pace of technological progress and specifically how partner search has been revolutionized by commercial sites on the Internet and commercially produced apps for smartphones. With this in mind the differences in the urban-rural resource constraints discussed in **publication 7** have seemingly become

eroded. Similarly, the developmental model of urban gay villages in England which was explored via the conceptual toolkit of the ‘New Economic Geography’ in **publication 8** is in need of revision given the passage of time and technological progress. While arguably retaining explanatory legitimacy in historical perspective, looking forward, its validity has arguably been terminally undermined by technological change and changes in broader macro-social trends.

Such trends mean that (i) Looking forward the developmental model of urban gay villages in England no longer provides an adequate guide to future development trajectories. (ii) The future possibility raised in **publication 8** (p. 1802) of a declining phase in urban gay districts and a long run equilibrium consisting of a relatively small group of large urban gay villages in cities and a larger number of much smaller gay districts, warrants wholesale revision. More specifically, the ‘declining’ phase in urban gay districts in England has seemingly already taken hold at a more rapid than then anticipated pace. Recent scrutiny of their presence, decline and relatively recent absence in many towns in England (Collins and Drinkwater⁶ 2016) suggests that they are, in the main, disappearing. (iii) Liberal social change, the growth of many and varied openly gay and lesbian orientated recreational and social clubs and societies, web platform social networks and the commonplace ubiquity of friend and partner search apps on smartphones have reduced the demand for, and thus rendered seemingly redundant, most smaller gay districts (and their cornerstone - gay pubs).

In essence, almost any home, café and pub can now potentially feature, to a limited extent, *some* of the functions of physical gay venues. Indeed various studies surveyed in Collins and

⁶ In this chapter, setting out acritical analysis of the submitted publications, I briefly draw on some very recent research findings that are scheduled to appear in the forthcoming co-authored publication cited. The co-author, Drinkwater, is aware of its use in this specific segment of the thesis commentary.

Drinkwater (2016) suggest that commercial websites and apps, serve as important social and meeting spaces in gay men's lives. They can potentially be chosen to displace (when deployed) the regular need for specific physical gay meeting venues. Arguably, they are now reducing the motivation and frequency of long distance leisure commuting or migration to larger towns and cities due to their population size and thus better partner search matching on specific (niche) characteristics of desire. Collins and Drinkwater (2016) further suggest that niche focussed enterprise has also been one of the greatest beneficiaries of the shift to online commercial platforms, reducing overhead costs to producers/suppliers and reducing both out-of-pocket and time search costs for niche consumers.

Antipathy by some social scientist contributors to the model in **publication 8** has been framed around dispute with linear developmental models as well as the mere use of stylized facts and model abstraction therein. These criticisms have been articulated and summarised in Collins and Drinkwater (2016). In some cases, however, this antipathy seems to this author to be largely premised on personal taste and arguably some general distaste for explicitly economic modes of expression when applied to some particular topics. Arguably this issue also arose in the context of the published response to **publication 1** discussed previously.

Publications 10 and 11 focus on the regulation of the paid sex market. Both papers deal exclusively with consensual adult paid sex transactions recasting the paid sex market narrative into standard optimal consumption problems in the face of risk. The key messages are that client responses to risk can potentially be harnessed in regulatory and enforcement action on the demand side to shape the nature, extent, location and distribution of this activity in an economy. In large part this wholly theoretical approach and specific focus on the risk dimension was triggered by earlier wholly empirical work that I undertook using national UK survey data (Cameron and Collins 2003). Conventionally in the academic economics

community we think of moving from theory to empirics in order that model estimates are informed by *a priori* expectations. In many cases this line of thinking can clearly be usefully reversed and such reversal is perhaps less uncommon in other disciplines, particularly where the influence of ‘grounded theory’ is more readily established (see, for example, Birks and Mills, 2011, Charmaz 2014)

My judgement is that both papers make legitimate and important points which do have potential for direct policy relevance. Yet on reflection it is clear that these specific works do seem to speak primarily to an academic ‘law and economics’ or ‘economics of crime’ audience and this has probably limited the extent of their likely policy reach. That said there is still an opportunity for the authors or others to reframe the arguments in more accessible crime and social policy outlets in due course. In the light of the impact agenda there is perhaps a lesson here for placing research output in publication outlets that are more likely to achieve policy resonance, regardless of subject/disciplinary origins, preferences and biases.

Publication 9 is a short theoretical paper that addresses what seemed to the authors at the time a considerable oversight in the literature on the economic analysis and regulation of illegal drugs (narcotics) markets, namely the phenomenon of addict death. The article sets out why this oversight may have arisen. It then proceeds to consider the implications for formally integrating addict death within such analyses.

In the context of the South African film and television industry **publication 12** considers the distribution and effectiveness of state subsidies. These transfers are situated within a complex multi-agency web of overlapping policy interventions intended to secure labour market transformation (i.e. become more racially representative), boost employment, support local African culture and attract foreign investment. The study is based on multiple methods, comprising: quantitative data analysis, critical assessment of ‘grey literature’ sources and a

small number of elite interviews. Within the paper a ‘subsidy concentration index’ is devised showing how a small number of production firms dominate the market for these subsidies to the detriment of some of the multiple policy objectives and the competitive fringe of smaller firms.

Further reflecting on the work, the ‘subsidy concentration index’ potentially merits further investigation in its own right and has potential applicability globally across a range of subsidy contexts and applications. It was devised initially to help meaningfully explore the distribution of subsidy in the South African Department of Trade and Industry (DTI) film incentive data under the strict requirement to maintain the anonymity of the production companies in the data set. I do not know of any other similar application using a subsidy concentration index and development of the idea may be merited for a public sector economics or public finance audience.

Potentially there is also scope to consider the film/television outputs as well or a proxy for them (audience numbers perhaps) with a view to developing some kind of subsidy variant of the Herfindahl Index (see Hirschman 1964). However, this would not necessarily be a reliable straightforward conceptual development to empirically implement and I have not had the time and resources to fully consider all the problems likely to be involved.

A key strength of the work is that the data analysed comprises the full population of completed and subsidised film or television projects over a three year window. However, it would have been desirable to have had access to a longer data time period since in the immediate previous years to the data period analysed in the paper there were many more major foreign film project investments. It seems that they emerge in waves and it would be useful to explore at close quarters their real economic impact on the South African economy. As such a longer than three year window might have offered an even more representative

picture of the contribution of these projects to meeting the various economic objectives set out.

A follow up paper using the same data has been prepared to explore the data in greater depth and even more systematically. Specifically we have applied multi-criteria visualization techniques to the data to see if it can help inform the evaluation of public subsidy effectiveness. This paper is currently under review. I also plan to seek further data from the South African (DTI) to be analysed during the course of my next research stay in South Africa in 2016.

Reflecting across this body of submitted work, my judgement is that I have sought to progress research work starting from a clear theoretical and conceptual framework but have engaged in increasing methodological pluralism in order to address research questions. In part this has been supported by harnessing complementary skill sets among research collaborators but also it has been served by greater personal confidence and methodological ambitions and interest particularly during the course of later and more recent work.

Chapter Four

Critical appraisal of the contribution of the submitted works

Some indication of the quality and standing of the published works can be considered quantitatively and via some more subjective indicators. These are considered below in turn.

1. Citations. While there is some broad acceptance that the number of citations can serve as a potential indicator of the quality and relevance of the published work, it must be noted that as a metric, it needs to be considered with some considerable caution. For the more recent publications, there will have been relatively little or no opportunity for citation. A summary of the citations as at 31st December 2015 is provided in Table 2 overleaf.

Table 2. Citations of Submitted Publications.

Publication Reference	Year of Publication	Number of Citations (excluding self-citation)
Environmental Problems and Policy		
Publication 1	1999	173
Publication 2	2007	19
Publication 3	2010	10
Publication 4	2012	4
Publication 5	2012	8
Publication 6	2016 (was available online late December 2015)	0
Social Problems and Policy		
Publication 7	2004	21 (see note 1)
Publication 8	2004	85 (see note 1)
Publication 9	2006	3 (see note 2)
Publication 10	2008	5
Publication 11	2010	3
Publication 12	2015	1

Source: Google Scholar on 4th March 2016.

Note 1: This journal article has also been published in edited book form (Collins 2013). This book has so far accumulated 16 citations. Additionally, the success of the special issue *of Urban Studies* that these articles featured in have prompted the offer of a follow up special issue scheduled to be published in late 2016.

Note 2: The source of the citation is also some indication of quality or standing. **Publication 9** has been cited in two sections of an influential World Bank study report relating to the ‘war on drugs’ and a reading of these sources suggest it has clearly influenced lines of argument in that work. See: Keefer, Loayza and Soares, R.R. (2010) and Thoumi, F.E. (2010).

2. Research Assessment Exercise (RAE) Research Excellence Framework (REF)

Submissions. Inclusion is another potential indicator of the quality of the research. Publications included as part of a University's submission for a particular subject area have undergone a process of internal and external peer review. Yet there are some flaws and caveats linked to this view. For example, inclusion of a particular publication for RAE/REF submission also relates to other factors including what has been assigned as a submission for co-authors also being submitted and also the wider strategy of the submitting institution.

For RAE 2001, **publication 1** was included with three other publications which have not been included in this thesis.

For RAE 2008, **publication 2** was included with three other publications which have not been included in this thesis.

For REF 2014, **publications 5 and 10** were included with two other publications which have not been included in this thesis.

Publications 6 and 12 fall in the time period covered by the expected REF 2020 for which preparations are ongoing. These works may well be included in a submission but this is perhaps likely to be contingent on whether a suitable linked Impact Case Study can be formed and linked to one or either of these papers.

3. Quality of Journals: Journal rankings can provide some indication (albeit imperfect) of the quality of a published paper. One of the most frequently quoted journal ranking systems in economics and business is that provided by the Association of Business Schools (ABS) (see <http://charteredabs.org/>). In this ranking system 4* is the highest ranking score. Another such widely quoted journal ranking system is the Australian Business Schools Deans Council List (ABDC Journal Quality List) (see <http://www.abdc.edu.au/pages/abdc-journal-quality->

list-2013.html). In this ranking system A* is the highest ranking score. Coverage and ranking of some specialist field journals across such listings can seem to be somewhat idiosyncratic. For example, many journals in transportation where I have published some of the submitted works do tend to have higher standing in such specialist rankings of academic transport journals. Furthermore, some journals are for unclear reasons overlooked or simply not listed in one or either of the ABS/ABDC or similar other journal rankings. Nevertheless, the two ranking scores highlighted (ABS/ABDC) for the relevant journals containing the submitted publications are set out below:

Annals of Tourism Research (4/A*) (**Publication 1**)

Environment & Planning A (4/A*) (**Publication 2**)

Transport Reviews (2/-) (**Publication 3**)

Journal of Policy Modeling (2/A) (**Publication 4**)

Economics Letters (3/A) (**Publication 5**)

Cambridge Journal of Economics (3/A) (**Publication 6**)

Urban Studies (3/A*) (**Publications 7 and 8**)

American Journal of Economics and Sociology (2/B) (**Publication 9**)

International Review of Law and Economics (2/B) (**Publication 10**)

European Journal of Law and Economics (1/C) (**Publication 11**)

International Journal of Cultural Policy (-/A) (**Publication 12**)

By these various measures the total body of work submitted for the thesis can be argued to have had (to varying degrees) some measure of academic impact and can be said to have met some conventional quality threshold given the rankings of the journals they were published in.

4. Other Evidence and Qualitative Commentary: By way of policy impact and possible REF 2020 impact, for **publication 12** the Government of South Africa had early access to this work through an Economic Research Society of South Africa (ERSA) working paper version (see: <http://www.econrsa.org/publications/research-briefs/transformation-job-creation-and-subsidies-creative-industries-case>). Soon after publication the Department for Trade and Industry (DTI) instituted policy reforms that accord precisely with the policy recommendations set out in the article. As yet I do not possess a clear acknowledgement from the South African DTI that this work was directly influential in shaping the form of the new incentives policy. This would be desirable in the light of the importance of impact case studies for REF 2020 and I intend to expend some effort to try to gather such an acknowledgement.

Publication 12 was also a key element of evidence in a three university consortium (Rhodes University, Nelson Mandela Metropolitan University and University of Fort Hare) bid submission to the South African Government's Department of Art and Culture to establish a National Cultural Observatory for South Africa. The bid was successful in winning a budget of R45 million over three years. My future research collaborations in the cultural and creative industries sector will build on **publication 12** and be jointly based around the research agenda of this Observatory and also the demands of a successful six university consortium EU Horizon 2020 bid. The latter bid relates to a timely project (given the UK EU referendum in June 2016) titled: PERCEIVE: Perception and Evaluation of Regional and Cohesion policies by Europeans and Identification with the Values of Europe. Culture was argued to be a key aspect of such cohesiveness and value identification. The total budget is €2.49 million with the University of Portsmouth team having direct oversight of over 10% of this budget. The impacts of the ongoing work presented in **publications 6 and 12** are clearly yet to fully unfold but there is in my judgement considerable promise in terms of citations or academic

response, offering foundation work for more refined future research activity and Government policy resonance in a South African context. Specifically this might relate to influencing the design of any post-CITES 2016 regulatory regime in South Africa.

For **publication 6** the work has led to an invitation to talk at a stakeholders' group meeting on Ghost Ivory (i.e. illegal ivory) and the Antiques Trade at the House of Commons and the offer of a second Hobart Houghton Fellowship tenure period (the first time it has been given twice to an individual) at Rhodes University. Details of this fellowship scheme are set out on the website: www.ru.ac.za/research/funding/fellowships/hobarthoughtonfellowship. The intention is to develop the work on regulated market development in the light of the recent rhino horn domestic trade legalization decision in South Africa and the upcoming CITES meeting in Johannesburg 2016 for which we plan to table the research as evidence.

In a more qualitative vein, of the past work in the submitted selection of papers and in the light of communications, correspondence and speaking invitations generated, **publications 1 and 8** have in my judgement had the greatest personal academic impact. This supports the observation that of all my hitherto published work these two papers currently rank second and third in terms of numbers of citations. That said, with respect to **publication 1** I have not since pursued or published any further research work in the field of tourism largely due to competing academic interests but I have attracted and undertaken PhD supervisions in the area.

In terms of a subjective assessment of the significance of the key ideas in the submitted work, my sense is that the challenges to the standard orthodox economic case for rhino horn legalization in **publication 12** is likely to offer the greatest legacy and prompt some potentially very lively future debate. The rejection of the 'Kuznets U' hypothesis for transport emissions and household income in the UK (set out in **publication 5**) ought to be similarly

significant, particularly given (i) the scale of the problems of local air quality and global climate change and (ii) the seeming overreliance in the UK on technological improvements in new cars to address these problems. Without a concerted programme of follow up work such academic interest and policy resonance seems unlikely to become manifest.

I am also a little surprised that the course of recent UK political and media debate on the potential implications of ‘Brexit’ (following the June 2016 EU membership referendum) has given minimal exposure to issues related to port infrastructure capacity constraints (as explored in **publications 2, 3, 4**). This work remains beyond serious policy or media scrutiny. Despite ‘Brexit’ the UK would still be subject for a considerable period of time (given berth construction lead times in the UK) to significant dependence on Continental termini and likely increasing shipping cost premia over time. This reasoning is linked to the global trend towards increasing container ship size and thus greater UK reliance on feeder traffic movements from Continental port termini (where far more ultra large berths are located). This seems likely to contribute to increases in intermediate and final goods prices. Thus depending on the outcome of the referendum there may well be a stronger policy and funding imperative to prompt re-exploring these issues more formally. This could be done by considering ‘Brexit’ implications and scenarios in a follow up paper employing and developing the model presented in **publication 4**.

There is clearly some considerable variability in terms of the overall contribution made by each article to academic and policy worlds. This is perhaps only to be expected from a submission comprising twelve articles, including some very recent studies. Nevertheless, taken as a whole it is contended that the submitted works do offer a real and significant existing contribution and that the later works do offer significant ‘contribution potential’. In combination the extent of such contributions outlined is argued to be broadly sufficient to support a PhD by publications submission.

Chapter Five

Summary and Concluding Remarks

The submitted articles for this thesis are thematically centred on the economic analysis and regulation of environmental and social problems. The commentary has provided a critical analysis of these twelve journal articles. It has sought to concisely situate them, within a conspectus of the literature. This takes place within the context of the key informing and prefacing literature and with some consideration where relevant, of the subsequent key streams in the relevant academic literature for each submission.

Subsets of the articles do represent contributions situated within an ongoing and ‘live’ research agenda. However, for some of the submitted works, their analytical approaches and conclusions advanced do now warrant some revision or reconsideration. Thus in the light of evaluative hindsight for each paper, some shortcomings and the scope for the application of alternative approaches or lines of thinking in future work are explicitly raised. The contribution of this body of work is also critically assessed in terms of its quality or standing and its academic or broader reach. Inevitably this varies substantially across each paper.

Table 1 summarises the range of methodological approaches deployed in the submitted publications. Over the course of generating this work I feel able to ultimately demonstrate considerable confidence and plurality in approach. The earlier methodological focus in the submitted work tends to feature more conceptual model development and theoretical analysis and economically informed policy critique. Over the time span of the submitted work I actively deployed more empirically focussed data disaggregation and index and metric development implemented on a spreadsheet platform. In large part use of this approach built on my earlier experiences using spreadsheets working in transport consultancy and in which I was largely self-taught.

Beyond the submitted publications are also a number of very standard econometric cross-section analyses where I generated all or some of the model estimates reported. Yet experience with such work does mean I am well placed and readily able to meaningfully engage with collaborators who are primarily specialist applied econometricians (for example, **publication 5**).

Working in an integrated business school environment has in my view been highly supportive of such methodological pluralism and I feel this would simply not be the case in most UK economics departments operating outside a business school setting. Accordingly, I have felt increasingly able to initiate research work and collaborations with other colleagues employing more qualitative modes of analysis. This includes the conduct and analysis of interviews with key informants or stakeholders and elite participants in a particular market context. Examples of such qualitative work do feature in the submitted publications and are likely to do so in much of my anticipated future work.

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