1. Introduction

The last 30 years have been the warmest since the first accurate records were created some 100 years ago. The increased temperatures are expected to cause extreme weather events, including heat waves, windstorms, tropical cyclones, floods and droughts. These events will have significant impacts on environmental, social and economic systems.

Although the earth’s climate has changed many times in history, the climate changes of modern times are unique. The Intergovernmental Panel on Climate Change (IPCC) has, on the basis of numerous scientific studies, concluded that the rising temperatures of the last 50 years are very likely caused by the unprecedented increase in global atmospheric concentrations of greenhouse gases (GHG). This rise in emissions is very likely the result of human activities since the industrial revolution.

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3. Paleontological evidence shows that over the billions of years of its existence, the Earth has experienced unusually warm and wet periods, as well as ice ages, several times. Even in the last thousand years, there was the Medieval Warm Period in the 11th–14th century and a relatively cool period during the Little Ice Age in the 15th–19th century. This can be due to natural catastrophic events and different solar activity. See ibid 80–81.
4. By ‘very likely’ scientists understand a 90 per cent probability. See ibid 265.
5. For instance, the concentration of carbon dioxide, the most important anthropogenic GHG, has increased from a pre-industrial level in 1750 of about 280 ppm to 379 ppm in 2005. See IPCC, *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, S Solomon, D Qin, M Manning, Z Chen, M Marquis, KB Averyt, M Tignor and HL Miller (eds) (Cambridge University Press 2007) 2. Apart from carbon dioxide (CO₂), there are also other GHGs, such as methane (CH₄), water vapour (H₂O), nitrous oxide (N₂O) etc. GHGs are so-named because they cause greenhouse effects: when they concentrate in the atmosphere, they warm it, as they absorb some of the thermal radiation emitted from the Earth’s surface. See Houghton (n 1) 421.
6. IPCC (n 5) 10.
The most carbon-emission-intensive human activity is fossil fuel combustion, which constitutes 75 per cent of the carbon dioxide emissions from human activities. Carbon dioxide concentrations in the atmosphere are also affected by changes in land use, while increases in methane and nitrous oxide are primary due to agriculture.

The logical solution to human-induced climate change is a reduction in GHG emissions. There is widespread consensus that the most efficient means of achieving this reduction is by putting a price on emissions. Emissions pricing is achieved through the introduction of market-based mechanisms, either in the form of emissions trading or emissions taxation systems. The price of emissions is expected to influence the technological decisions of firms and facilitate the transition to a low-carbon economy.

At the same time, emissions reduction policies, if pursued on the necessary scale, will inflict significant costs on industries. Producers from a country with an emissions reduction system in place will be at a competitive disadvantage vis-à-vis producers from countries without such restrictions in place. Production costs in countries with no emissions constraints are likely to be lower and products imported from these countries are likely to be cheaper than domestically produced products in countries with emissions pricing systems in place. The competitive distortions may force producers to relocate their emissions-intensive production to countries without emissions management systems in place, causing what is termed ‘carbon leakage’.

Putting commensurate prices on the emissions of foreign producers through border adjustment measures (BAMs) would contribute to the prevention of carbon leakage. With BAMs in place, domestic industries would be less hesitant to take part in emissions reduction schemes. The incentive to reduce emissions would arise for foreign producers as well: by lowering the carbon footprint of their products they would face lower taxes at the border when they export into a country with carbon legislation in place. BAMs might also encourage large developing

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7 Ibid 512.
8 Ibid 2.
10 Stern (n 9) 393.
countries – major global GHG emitters and large exporters of carbon-intensive products – to establish emission reduction systems comparable to those in existence in the EU or pending in the US, in order to ensure they will be exempted from the BAMs of developed countries.

However, because the opinion of developing countries on how the burden of climate change mitigation costs ought to be shared differs from the position of developed countries, the application of carbon-related BAMs by developed countries to imports from developing ones will likely be viewed by developing countries as unfair. Consequently, developing countries might resort to retaliatory measures and potentially even sabotage international climate negotiations.

In addition to political considerations, the application of carbon-related BAMs could face hurdles posed by legal uncertainties concerning such measures. While adjustments at the border for consumption taxes are a normal international trade practice, the border adjustment of domestic measures linked to emissions are perceived in the WTO as special measures since they are not imposed on products directly but on non-product-related processes and production methods (npr-PPMs). The PPM character of carbon taxes and regulations, and the peculiarities of emissions allowance requirements under an emissions trading scheme (ETS), raise questions regarding the legality of carbon-related border adjustments under WTO law.

This book explores the consistency with WTO law of various forms of carbon-related border adjustments and examines potential solutions to the problem of non-compliance. It is not aimed at giving a normative assessment of carbon-related BAMs from the perspective of their economic efficiency or their environmental expediency. It only aims to examine the legal implications of carbon-related border adjustments and to identify possible solutions to their inconsistency with WTO law with the purpose of minimizing the risk of disputes arising at the WTO. The question of whether these measures would really contribute to the achievement of climate policy objectives is the subject of research in other disciplines.

The scope of the study presented in this book is limited to carbon-related BAMs applied to the trade in goods, both on their importation and exportation.

The book is organized in three parts. Part I places the issue of carbon-related border adjustments in the context of climate change. Chapter 2 discusses the challenge of human-induced climate change and the current efforts being undertaken to tackle it within the multilateral framework of the United Nations Framework Convention on Climate Change (UNFCCC), as well as at the local, national and regional level.
also examines the interaction between climate policy and the international trade system, with a particular focus on the risk that conflict might arise between the rights and obligations of countries under the WTO and any trade-related measures they might take under a future international climate agreement. Chapter 3 highlights the issue of carbon leakage as it pertains to emissions reduction systems and discusses a range of possible tools that could be used to address this issue, including the adjustment of carbon measures at the border. It also provides an overview of proposals to implement carbon-related border adjustments in countries with existing or pending emissions reduction systems in place. Chapter 4 introduces the notion of border adjustment, discusses the history and evolution of border adjustment practices in international trade, and outlines the WTO’s legal framework for the application of BAMs.

Part II focuses on the legal issues related to BAMs as they would be applied for climate policy reasons. Chapter 5 deals with PPM-related issues associated with carbon-related BAMs. It highlights the primary legal questions that arise for BAMs implemented using PPMs. It does not deal with other, non-PPM-related, legal issues associated with carbon-related BAMs, which are discussed later, in Chapter 7. Chapter 5 briefly discusses the PPM debate at the WTO, the related issue of likeness of products and its impact on the eligibility of carbon-related measures for border adjustment under WTO law. It then continues by examining the possible conflicts between carbon-related BAMs and the MFN and national treatment obligations. Chapter 6 explores the possibility that carbon-related BAMs could be justified under GATT Article XX, including identifying the hurdles and offering lines of arguments for the defense of BAMs under the health and environmental exceptions of the GATT. Chapter 7 supplements the legal analysis of BAMs undertaken in Chapter 5 with an examination of non-PPM-related aspects pertinent to the design of various carbon-related BAMs, while Chapter 8 identifies the possible inconsistencies of carbon-related BAMs with WTO rules at the implementation stage.

Part III explores ways in which the inconsistencies between carbon-related BAMs and WTO law can be addressed. Based on the findings of Chapter 6, which shows that the defense of these inconsistencies under GATT Article XX might be problematic, Part III explores institutional solutions that could provide long-lasting certainty. Chapter 9 examines the possibility that an agreement could be reached on the use of carbon-related BAMs in the multilateral forums of the UNFCCC and the WTO. In particular, it discusses the prospect of adopting a plurilateral
agreement on the use of carbon-related border adjustments, an authorita-
tive interpretation of relevant WTO provisions, or a waiver of the relevant
WTO obligations. It identifies the limits to a consensus-based multilateral
approach and proceeds with an exploration of the potential for bilateral
and regional negotiations to provide solutions to these issues. Chapter 10
examines the possibility that provisions on the application of carbon-
related BAMs could be included in preferential trade agreements (PTAs)
with a particular focus on the legal implications and practical feasibility
of the PTA-approach. The book concludes with a summary of the main
findings.